AMERICAN GAS ASSOCIATION MONTHLY

MARCH · 1938

A. G. A. RATE SERVICE

This Service, published in loose-leaf form, contains over 500 pages of complete and accurate information relative to gas rate schedules throughout the country. The volume is kept up-to-date at all times by supplementary sheets issued at frequent intervals, incorporating changes in gas rates as they occur.

THE RATE SERVICE CONTAINS:

1. Complete gas rate schedules in effect for practically every community in the United States and its Possessions, Canada and Newfoundland, together with data on kind and heating value of gas supplied.

2. Complete list of gas companies with names of communities supplied by each company.

3. List of gas companies having special rates for water heating.

4. List of gas companies having special rates for house heating.

5. A tabulation showing all communities in which therm rates are now in effect and the names of companies serving these communities.

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AMERICAN GAS ASSOCIATION MONTHLY

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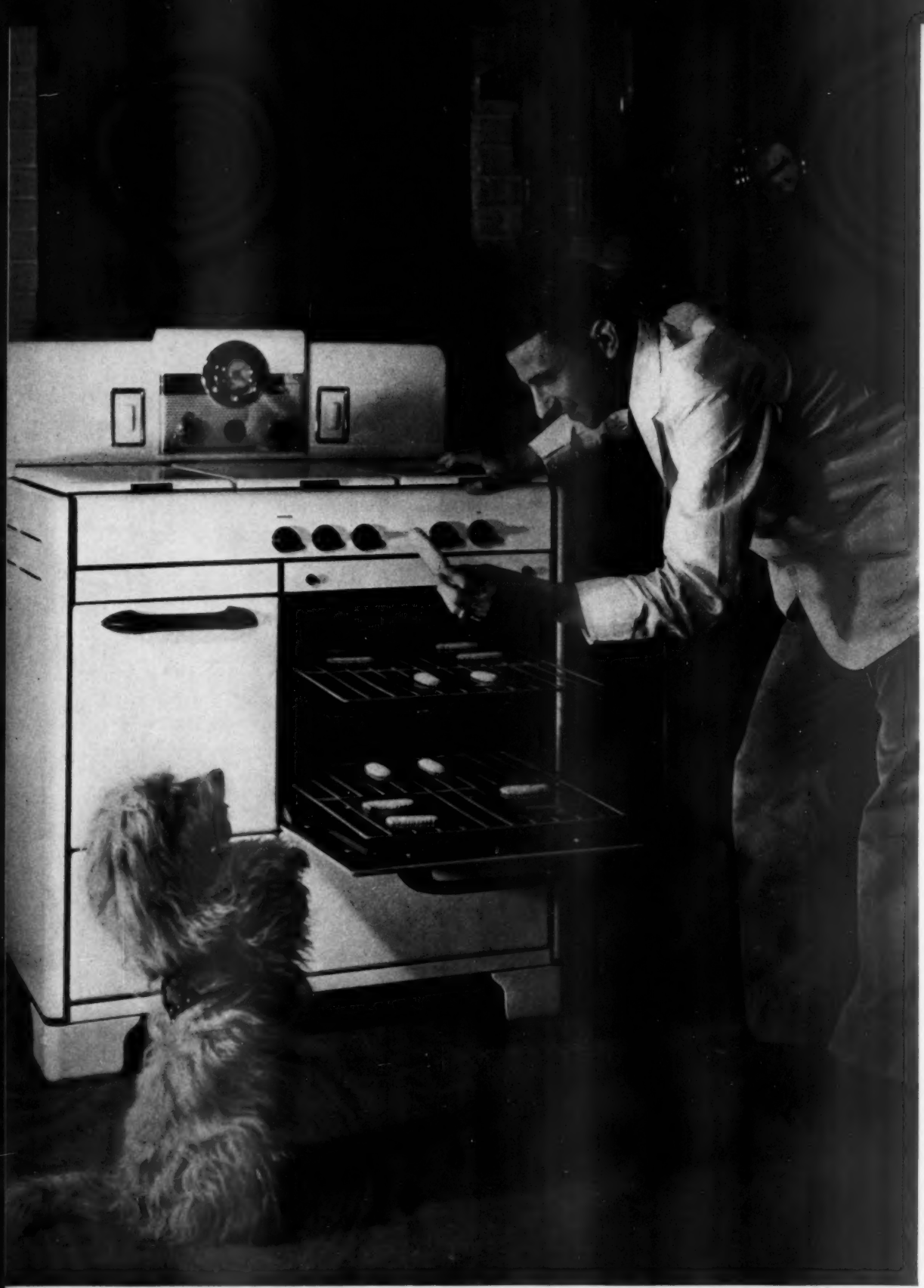

A. G. A. Laboratories' engineers must know their cooking as well as their testing to determine evenness of oven heat distribution

AMERICAN GAS
ASSOCIATION
MONTHLY

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James M. Beall, Editor

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Home Planning Competitions

FOUNDED on the theme, "Use Gas for the 4 Big Jobs," cooking, refrigeration, water heating and house heating, the great nationwide program of the gas industry for the construction and modernization of homes gets under way this month. The opening gun will be the announcement in the March issue of *The Architectural Forum* of an architects' competition involving $13,700 in prizes for the best design of a completely gas-equipped house. Other features of the program include a builders' competition, with $10,000 in prizes being offered, and the erection of one or more of the prize-winning model homes, fully equipped and furnished, at the 1939 New York World's Fair.

The March issue of the *Forum* will also contain a specification and information catalogue of gas appliances and equipment for homes. In addition to the magazine's regular circulation, the special gas section will be bound under separate cover and sent by direct mail to important architects and builders in the United States.

The gas industry will not furnish house plans, but will refer all prospects to local architects and builders. It will also establish a service for architects and builders in all matters pertaining to gas appliance installations and, through demonstration homes, assist in interesting the general public in the use of gas appliances for new home construction and modernization. It is therefore contemplated that hundreds of model all-gas homes will be erected throughout the country along the lines of the prize-winning designs. In this way, millions of people may see modern gas appliances in operation.

Advertisement announcing the competitions

Thus the gas industry this month takes the first step in a far-reaching program to acquaint the architects and builders, and through them, the home owners, with the fact that gas is the ideal fuel for the home. It is perhaps the most significant undertaking ever attempted by the gas industry. Combined with the national advertising program, the certified performance range program, and other phases of the industry's great promotional drive, it cannot help but create a lasting impression on the public and result in greatly increased use of gas appliances.

Timeliness of the program was emphasized last month by the signing of the liberalized National Housing Act. This act launches the government on a large-scale activity to stimulate home building and gives added impetus to the gas industry's program. It also gives this industry a great opportunity to assist in increasing employment in the construction field.

In commenting on the initial phase of the program, N. C. McGowen, president of the American Gas Association, said: "I feel that here is an opportunity for our industry to demonstrate to every architect and builder in the land that we want and need their support and interest in this program. I feel that the prizes, which are in themselves important, should be of interest to every architect and builder. It seems to me, however, that a still larger opportunity lies in the creation of new ideas in home planning and building for the inclusion of gas services.

"Ninety per cent of today's homes in America use gas as the household fuel. That in itself justifies the serious consideration of our architects and builders. With further building activity imminent, it is most timely for them to join hands with the gas industry in anticipating future demand for gas services."

The Certified Performance Gas Range

By HALL M. HENRY

Chairman, Subcommittee—C. P. Range Promotion

Hall M. Henry

GAS continues its march to better living and freedom from drudgery just as it pioneered carefree cooking and first cut the chains that bound woman to a dirty cookstove. As it first introduced carefree economical water heating and first developed clean automatic house-heating and freed American women from the coal shovel. As it pioneered winter air conditioning and surprised the nation with silent trouble-free gas refrigeration, it now offers a new standard of performance in modern cookery through the sponsorship by a united gas industry of the Certified Performance Gas Range, a gas range to be specially built to specifications that bring forth many of the best virtues of Gas.

Significance of C. P. Range

This is one of the most significant steps yet undertaken by the gas industry—and I do not wish in any way to minimize the importance of such activities as the National Advertising Program, the Home Modernization Bureau, the A. G. A. Laboratory, etc. The real significance to the gas industry of the C. P. Range lies in the fact that for the *first* time the consumer has a means of identifying gas ranges that properly interpret Gas values.

Our A. G. A. Laboratory has done meritorious services from a safety viewpoint and even in the matter of performance, yet the performance standards had of necessity to be minimum rather than optimum. The National Advertising Program has been most helpful in selling the virtues of Gas, but leaves the customer to his own tender mercies when he wishes to buy a truly representative gas range. With some two hundred or more makes to choose from, how is the customer to know that a Gadgerette Gas Range at $59.50 does not give as good cooking performance as found in the De Grand Gas Range at $89.50? To Mrs. Customer they look alike. Unfortunately, good cooking performance cannot be made to stand out in the appearance of the range. Because of this fact, it becomes necessary to establish certain cooking performance standards and to provide a means of identifying the gas ranges that meet these performance specifications. The C. P. Range fulfills this need.

Far-Reaching Program

The future of the gas industry depends on customer satisfaction, and the acceptance or rejection of gas for cooking depends on its performance in a product, the design and construction of which is out of the gas companies' hands. For this reason the C. P. Range is an important and far-reaching step in the history of the industry.

The C. P. Range is the means of protecting the reputation of gas as the premier cooking fuel. That such a step is wise may be drawn from the move that is now underway in the electric industry to insure the standards of performance of the electric range. This industry fears that the large number of manufacturers entering the electric range business may result in inferior electric ranges which might produce a serious set-back to electric cookery, even where Gas is not available. Hence, they have proposed to set up minimum standards of performance and to establish a means of identifying such ranges.

What the C. P. Range Means to the Consumer

The C. P. Range stands for Buying Confidence on the part of the public.

For the first time the public has a means of identifying a gas range with *known* performance qualities and can look forward to many years of cooking with confidence when buying a C. P. Gas Range. She need no longer be fearful of buying a range that will not bake well, that does not have adequate insulation to keep her kitchen cool, that is not economical as to fuel, that is not properly and adequately equipped with modern automatic features, that is not speedy, that does not have smooth easy sliding shelves, drawers, broiler pans, etc., that does not make for utmost in cleanliness. In fact, she is assured of seven superior performance features, such as:

1. Cooking Performance
2. Automatic Features
3. Cool Cooking
4. Speed
5. Economy
6. Convenience
7. Cleanliness

There are twenty-two specifications on the C. P. Gas Range which produce the above seven *improved performance features.*

1. Better Cooking Performance

The customer is assured of better cooking performance because of the specification that the oven must *bake* uniformly; because of the requirement that ovens must be capable of maintaining 250° F., thus insuring (according to latest authorities) less shrinkage of meats, more tender foods, more even browning and doneness, and enabling oven canning with no boiling out of jars; better broiling because of 50% greater effective broiling area, thus producing uniform "done-ness," uniformity of flavor, juicier meats, etc.; better cooking performance because of a Giant burner insuring quick sustained vigorous boiling and because of two-way top burners insuring waterless cooking, low heat for simmering and sustained low boiling.

2. Automatic Features

The customer is assured of a gas range that has automatic oven temperature control insuring certainty of re-

Presented before Mid-West Regional Gas Sales Conference, Chicago, Ill., February 10, 1938.

sults and time releasing, automatic top burner lighting, oven lighting and broiler lighting, eliminating matches, push buttons or opening of oven doors to light burners.

3. Cooler Cooking

The customer is assured of cool cooking because of new standards for insulation (average surface temperature is 30% cooler than formerly); because of more efficient top burners and ovens so that less heat goes into the kitchen and more into the food.

4. Speedy Cooking

The time to bring oven to 500° F. temperature has been specified as eleven minutes giving quick heating results. Oven broilers must heat up more quickly, and at least one top burner must have 12,000 B.t.u. input, enabling quick speedy boiling. All of these features produce 40 to 50% faster results over many of the gas ranges previously offered for sale and they out-perform competitive ranges.

5. Economical

The customer is assured of more economical use of gas since the specifications require top burner efficiencies of at least 45%, whereas many of the ranges gave only 30 to 40% and, further, because ovens and broilers must come up to temperatures of 500° and 600° on less gas than formerly.

6. Convenience

The C. P. Range insures greater convenience because of ball bearing drawers or equivalent, with finger tip control and effective stops to prevent accidental spilling; because of fully automatic lighting, resulting in no stoop—no squat—no scratch; because of "click" top burners—a simmering flame without peaking.

7. Cleanliness

The customer is assured of added cleanliness because of non-rusting burners; because vents are directed away from walls and because of smokeless broiler pans.

In substance, the customer is assured of the best cooking appliance from a *performance* viewpoint and a means of identifying a gas range of *known* qualities. She has had two important guesses eliminated, (1) she can *buy with confidence* and (2) she can *cook with confidence.*

What does the Certified Performance Range Mean to Manufacturers?

It means *first* that he is assured that all of his research and effort to build better gas ranges is not lost through the inability of the customer to tell the good performer from the bad. It means a unified sales theme of modern gas cookery which should stimulate more gas range sales. It means a new sales appeal for the salesmen, thus adding emphasis to gas range selling. It means more local and national promotion of gas ranges. It means emphasis on performance rather than gadgets. It means tremendous local and national publicity because of the news value of the C. P. Range Program. It should mean an ever widening market for gas ranges because of the better acceptance surely to be gained through the C. P. Ranges. It should mean greater profits because of the sale of better and higher quality merchandise.

What the Certified Performance Range Means to the Gas Industry

The C. P. Range means that *gas fuel values* will be *properly presented* to our customers. It means our customers can distinguish between those ranges that give gas cooking standards and those that do not. It really makes possible an effective unified national promotional *cookery* program. It means that better gas ranges will be available to meet competitive fuel ranges. It provides an effective means of accelerating replacement sales with a range superior to old models in every respect. It provides an easy approach to gas range replacement without reflecting on gas as a cooking fuel. It means placing emphasis on higher types of cooking equipment. It presents an unparalleled opportunity for active and successful gas range promotion. It means our dealers and salesmen can sell and promote gas ranges with confidence.

How Was the C. P. Range Developed?

The specifications for the C. P. Gas Range were developed by a special committee appointed by Herman Russell, Past President of A. G. A., for the purpose of improving the quality of gas ranges. The first committee chairman was Hugh Cuthrell and the members were representatives of various gas companies and gas range manufacturers. The present chairman of the Committee for Improving Domestic Gas Appliances is N. T. Sellman.

This committee had many long and heated discussions on the various specifications, yet they were in one accord in their desire to establish better performance standards. The present specifications could undoubtedly be criticized from a number of angles—and you would find an ardent champion on the committee. However, I can assure you that whereas I was for stricter requirements in many particulars, these requirements represent a big stride forward and possibly as large a step as should be undertaken at one time. Had the requirements been made stricter, it may have resulted in only a few companies being able to meet the specifications. As it is, there seems no reason why a large number will not be ready by August 1 with C. P. Ranges.

The committee felt the move so important that it should not jeopardize its success by making requirements so strict as to preclude a large number from being ready with C. P. Ranges. It also realized the tremendous amount of education necessary among the utilities and manufacturers before the real spirit back of this move could be fully appreciated. As the manufacturers see the importance of this movement and as the utilities give it support, the improved requirements will come as a matter of course. So let's at the outset realize that these specifications may not be all that we would want but they do represent a real and measurable improvement, and once the principle has been established, the refinements and higher specifications can be added.

The committee of utility and manufacturer representatives of which Mr. Sellman is chairman has therefore been responsible for the C. P. Range specifications and for the testing procedure to check compliance. These specifications have in turn been approved by the Range Committee of the A. G. A. E. M. and by the A. G. A. E. M. and A. G. A. Boards. Hence, they are the

official specifications of the gas utilities and the range manufacturers.

How and Where the Range Will Be Tested

The range manufacturer may send his range to any reputable and established laboratory, such as that of a commercial testing laboratory or of a university, or at the A. G. A. Laboratory. The manufacturer is responsible for his ranges meeting the C. P. specifications.

How the C. P. Range Will Be Promoted

The C. P. Range promotion will be a part of the work of the standing Range Committee of A. G. A., of which Frank Houston of Rochester is chairman. However, in order to insure special and intensive promotion of the C. P. Ranges, a subcommittee of the Range Committee has been set up with the writer as chairman. The representation on this committee is composed of utility men and gas range manufacturers.

This committee will be charged with the responsibility of focusing national and local attention on the C. P. Range. To see that it is properly and thoroughly presented to the gas industry. To contact national publications and in general assist in every practicable way in the C. P. Range promotion.

The C. P. Range Subcommittee will have regional chairmen responsible for activities in various sections of the United States and they in turn will appoint state chairmen to carry through on the education and promotion of C. P. Ranges.

The Range Committee of the A. G. A. E. M. through its promotion subcommittee will also cooperate in the C. P. Range promotion. The A. G. A. E. M. will have a full-time sales promotion director on the C. P. Range. Thus, it appears that every possible means of developing and promoting C. P. Range sales will be available.

Great Opportunity—Grave Responsibility

We have a great opportunity and a grave responsibility; an opportunity to raise the standards of performance of appliances that use gas and a responsibility to the manufacturers to see that the money spent on research and dyes, tools and jigs to make possible the C. P. Ranges is amply returned through the sale of C. P. Ranges. Unless this is done, we will miss that opportunity for greater service to our customers through even better cooking performance gas ranges and will have failed in our responsibility to the manufacturers.

Status of C. P. Range Program

The specifications and testing procedure have been drawn and approved by Boards of A. G. A. and A. G. A. E. M. and are now official.

A basis for providing preliminary and future funds has been agreed on and approved by the Range Division of A. G. A. E. M. and the Board of A. G. A. E. M.

The ranges meeting the specification and testing requirements will be known as Certified Performance Gas Ranges.

An appropriate symbol or mono-

(Continued on page 120)

$1000 Prize to Stimulate Gas Local Tie-in Advertising

ADVERTISING managers of gas utilities and combination companies operating in the United States and Canada, whose local advertising activities best tie-in with the current national advertising campaign of the American Gas Association, will be awarded substantial cash prizes in a contest now being launched by the Association of Gas Appliance and Equipment Manufacturers. This competition which will open officially on March 1 and close at midnight on December 31 was announced by Merrill N. Davis, president of the Association and executive vice-president of the S. R. Dresser Manufacturing Company, of Bradford, Pa.

The contest was created as a means of stimulating greater interest on the part of local companies in the American Gas Association's national advertising campaign, and to induce these companies to tie-in more closely with it. The objective of the gas industry's national advertising program which is being conducted under the direction of the American Gas Association's advertising committee, T. J. Strickler, chairman, is the "promotion of gas as a modern fuel for domestic, commercial and industrial purposes." Consumer, trade and professional magazines with a combined circulation of about 18,500,000 are carrying this national advertising.

A bulletin giving details of the contest is being mailed to all gas companies in the United States and Canada. Official entry blanks are enclosed with the bulletin, and it is expected that early registration of the participating advertising executives will be heavy.

Rules prepared by the contest committee, of which F. E. Sellman of New York, treasurer, A. G. A. E. M., is chairman, provide that all forms of local advertising such as newspaper copy, window displays, direct mail and other promotional literature, radio, magazine space, and car-cards and outdoor billboard advertising are eligible for entry in the competition.

All local advertising campaigns submitted must tie-in with the national campaign, either by the use of the material offered by the American Gas Association such as reprints of advertisements, promotional literature, newspaper mats, posters and car-cards, window displays and photographs, or by the use of text matter, slogans or art work similar to that which appears in the national advertising.

Another feature of the contest is that each entrant's local program must center around the promotion of one or more gas appliances of a specific manufacturer. In this connection, however, the advertising executives may enter as many local campaigns as they wish.

General distinctiveness of the advertising and most effective use of the material available will be the basis on which the prizes will be awarded. Since the requirements of the contest do not entail additional art work, layouts and other production material, all participating companies will be judged on an equal basis regardless of their size.

Entries of newspaper advertisements will be by means of proofs of such advertisements; promotional literature and car-cards will be by samples of same; window displays and outdoor posters will be submitted in photograph form, and radio programs will be judged from scripts.

The entries will be passed upon by a board of judges, the appointment of which has not as yet been announced. They will be persons distinguished in the advertising field, but not connected with the gas utility or gas appliance industry.

Besides the cash prizes amounting to $1,000.00 being offered by the Association of Gas Appliance and Equipment Manufacturers to individuals, the companies whose advertising managers receive awards, will be presented with handsome embossed certificates attesting the awards.

Gas Industry Featured in Radio "Stories of American Industry"

Harry R. Daniel

Presented herewith is the radio script of the broadcast on the gas industry made February 5, 1938, as a part of the Department of Commerce Radio Series, "Stories of American Industry." The narrative of the story was prepared by Harry R. Daniel of the Department of Commerce. Dramatizations are presented with the cooperation of the U. S. Office of Education. The program is broadcast by the Columbia Broadcasting System every Saturday afternoon from 5:00 to 5:30 Eastern Standard Time and by short-wave over stations W2XE New York and W3XAU Philadelphia.

GOOD afternoon. In the early years of the seventeenth century there lived near Brussels, Belgium, a strange character named John Baptiste Van Helmont. Although a doctor of medicine, he spent most of his time in chemical experiments, hoping that some day he might discover the secret of turning base metals into gold. Still, Van Helmont had within him something of the spirit of the true scientist, for he kept notebooks in which he jotted down his observations.

One day, bending over a crucible, he noticed that the white-hot charcoal gave forth a living breath—a gust of some invisible substance, as if a living spirit were present. Van Helmont said:

"It must be a ghost. It must be a ghost!"

Derivation of "Gas"

And in his notebook that day Van Helmont described the strange, mysterious, invisible substance with the Dutch word for ghost, which is "geest." And from this strange derivation, according to some authorities, has come down to us our modern word "gas." Other authorities assert that Van Helmont derived the name "gas" from the Greek word "khaos."

One dark night on a country road in Cornwall, England, 150 years ago, two farmers were walking home from work—they sang as they walked.

SOUND: *(Men Singing Some Light Ditty Together)*

WILLARD: *(Stopping suddenly)* John! . . . Good Lord!

JOHN: What's the matter, Willard? . . . Ye sick?

WILLARD: *(Hoarsely)* Look! . . . Down the road! . . . That light!

JOHN: Li— . . . Oh . . . Oh that must be the mail coach, Will . . .

WILLARD: It ain't. . . . No mail coach ever carried a light like that! That's an open flame!

JOHN: *(Nervous now)* LORD! . . . You're right. . . . Flares like a candle movin' in the wind!

WILLARD: It . . . Can it . . . Ghost!

JOHN: It ain't of this earth to be sure! . . .

WILLARD: Ghost . . . that's what it is! . . .

JOHN: An' movin' right towards us!

SOUND: *(Faint Puffing as steam engine.)*

WILLARD: *(Almost breaking down)* Ohhhhhhhhhh! . . . Listen! . . . It's the breath of the devil!

JOHN: And that light's his eyes!

WILLARD: Holy saints defend us! . . . It's a monster . . . I can see it!

JOHN: What'll we do! . . . I . . . we . . . Hide!

WILLARD: Where? . . . It might see us!

JOHN: Behind this tree . . . come on!

SOUND: *(Puffing off and up rapidly . . . Clanking stops but soft puffing continues under voices following)*

MURDOCK: Hey! . . . What are you running for? . . . You men! . . . Can't you hear me?

JOHN: What are yuh? . . . Are yuh . . . a . . . a devil?

MURDOCK: Don't be afraid . . . This thing won't hurt you! . . .

JOHN: *(Coming closer)* What is it? . . . What makes it breathe so hard? . . .

MURDOCK: It's a steam engine! . . .

JOHN: It ain't human? . . . I mean it ain't alive?

MURDOCK: Course not. . . . Come on . . . it won't hurt you!

JOHN: Whew! . . . *(Frightened)* Ohhhhhhh! . . . That light! . . . It jumped at me!

MURDOCK: Come on now. . . . That's just a gas light! . . . Come here an' look at it! See . . . just gas burnin' in a skin bag!

JOHN: Did you make this unearthly contraption? . . . This what did you call it . . . steam engine?

MURDOCK: No . . . it belongs to my master, James Watt! . . . The light I made myself!

JOHN: It ain't human. . . . I mean . . . it isn't right to build such things!

MURDOCK: Where's your friend? . . . I say there, sir! . . . Come on over here! . . . It won't hurt you! . . .

JOHN: *(Weakly)* Yes . . . come on, Will . . . It . . . won't hurt you!

MURDOCK: Would you like a ride, gentlemen? . . . I'm going your way. . . .

JOHN: No . . . no thanks . . . we . . . we're just out for the walk! . . .

MURDOCK: *(Laughs)* Oh you need have no fear. . . . What do you say, Will? . . . Come, don't stand there with your eyes bulging!

WILLARD: Engine . . . Gas . . . Holy Saints . . . What's the world comin' to!

MURDOCK: You'll be seein' lots of these around, gentlemen . . . so you may as well calm your fears. . . . You'll be seein' many a steam engine and many a nightly flame before you're much older . . .

Thus 150 years ago, William Murdock, long before the days of railroads, drove a steam engine along an English road by the light of burning coal-gas—the first time manufactured gas ever had been used for illumination. As the result of this crude experiment, Murdock was encouraged to still further research. One day, shortly after his successful experience with the use of gas as a light for his steam carriage, Murdock said to himself:

"I believe I can manufacture enough gas from coal to light my home."

Soon he succeeded in conducting coal-gas through 70 feet of tin and copper tubes to his village home in Cornwall, and then one night a great crowd gathered in the quiet village street. From the windows of Murdock's home there streamed a brilliant golden glow, as though hundreds of candles had been lighted within his home.

In these early experiments by Murdock, the gas was lighted just as it

flowed from the open end of the pipe. One day Murdock desired to extinguish the light. As he had mislaid the cap which fitted over the tube, he picked up an old thimble full of holes. This he placed over the end of the tube, and, to his amazement, the gas light burned all the more brightly. Murdock realized at once that by placing a tip with small holes over the end of the pipe, a better light would be obtained, and thus there was brought into use for the first time the gas tip or gas burner.

First Gas Street Lighting

In 1807, the first public demonstration of street lighting took place in Pall Mall, London. Soon gas was being used throughout the city. The story is told that the Shah of Persia later was making a visit to London where he beheld, for the first time, the wonders of gas. The Oriental potentate was over-awed with the sight. Immediately, he asked to be taken to the gas works. He said:

"Tell me, who was the man that invented this process?"

Someone answered: "Murdock, Your Majesty. William Murdock."

To which, according to the story, the Shah replied: "Murdock! Murdock! Why, that is the name of the ancient Persian God of Fire who has been worshipped in my country since the earliest times!"

And, as proof of the profound impression which the incident made on him, the Shah caused a portrait of Murdock to be placed in a shrine in his royal palace.

Meanwhile, the use of manufactured gas for lighting continued to spread. In the United States, Baltimore was the first city to light its streets in this manner, and in 1816 the first American gas company was formed in that city.

Late one night in the village of Fredonia, New York, great crowds had gathered on the streets to welcome the arrival of a celebrated hero.

SOUND: *(Murmurs of crowd. Music. Clatter of approaching hoofs and rattle of coach.)*

CROWD: *(Up. "Here they come . . . the General . . . the General." Cheers.)*

MAYOR: General Lafayette and members of your distinguished party, as mayor of Fredonia, I realize the great honor you have shown our little city by your visit. In behalf of all our people, I bid you a hearty welcome!

GENERAL LAFAYETTE: Thank you, Mr. Mayor and the good people of Fredonia. My abject apologies for being so late, for here it is two o'clock in the morning. It was our intention to arrive well before midnight, but our coach broke down on the road from Buffalo. But, Mr. Mayor, a very strange thing occurred. For miles and miles back on the road we could see the lights of Fredonia in the distance. And here is your city, more brilliantly lighted than Paris itself!

MAYOR: This is easily explained. Fredonia is illuminated by natural gas. We have the great honor, General, to be the first city in the world to make use of a gas that comes from the ground.

GENERAL L.: Ah, that is most interesting. What a capital story I shall have to tell when I return to France! Tell me more about it, Mr. Mayor.

MAYOR: Some time ago, a country woman near this city went to a spring carrying a lantern. She stumbled, dropping the lantern, and, to her amazement, the very ground seemed to burst into flames. Within a year, a well had been dug on the spot and the escaping gas was conveyed through wooden pipes to the homes of the people of Fredonia.

GENERAL L.: I have never encountered anything so interesting! Tell me more!

MAYOR: We are greatly honored, General, that you are so interested, and perhaps it will increase your interest to learn that we are using this gas, not only for illumination, but for heating. Indeed, General, a repast is waiting for you now—a good American meal which has been cooked with this remarkable gift of nature.

GENERAL L.: What an experience! How remarkable you Americans are! I shall never, never forget this night. To eat by the light of this natural gas a meal which has been cooked by the same gift of nature! I predict, Mr. Mayor, that some day the name of your city will be known around the world.

CROWD: *(Cheers).*

And the prediction made by General Lafayette that night indeed came true, for the fame of Fredonia as the first city ever to make use of natural gas traveled around the world. And the city adopted, as its official seal, the picture of five burning gas-jets.

With the discovery of oil in Pennsylvania, natural gas took its place with manufactured gas in American industry. For gas and oil often are found together.

Toward the close of the last century, the American gas industry faced a crisis. In many places the old gas jet was turned off forever. Electricity's day had come. A meeting of leaders in the gas industry was called to consider the problem. Some one said:

"Gentlemen, there's just one thing to do—we must educate the public to use gas for cooking and heating!"

Then began one of the most remarkable educational campaigns in the history of American industry. Scientific studies were made to enable the American housewife to perform her work more easily. The gas range was steadily improved with the result that today's beautiful, efficient product, insulated against heat and equipped with automatic controls, uses actually 25% less gas than did the stoves of yesterday.

More than one hundred years ago a young English scientist, Michael Faraday, was at the beginning of a great career. One day in his laboratory, over the gas burner he had suspended a test tube containing ammonia. To his amazement, he found that the ammonia vapors which had been condensed by compressing and cooling would, when the pressure was removed from the liquid, boil violently—and then become cold. Faraday did not follow up this amazing discovery of producing cold from heat, but turned his attention to the study of electricity.

Gas Refrigeration Discovered

However, during the years that followed, the so-called compression theory of refrigeration gradually was developed until, a few years ago, two young students at the Swedish Royal Institute of Technology discovered a method of producing household refrigeration by the action of a tiny gas flame. Five million dollars were paid them for their discovery, and today, in many American kitchens, one of the marvels of the ages is daily enacted—on one side, gas makes heat, while on the other, gas makes ice. Gas furnaces, gas water-heaters, and many other gas appliances have grown in popularity so that last year 16,000,000 American homes helped to consume more gas than was ever before produced.

One of the most amazing developments in modern industry has been the industrial use of gas, in everything from the manufacture of carbon black, cement, fertilizer, and glass to the tempering of pen points and watch springs. All together, more than 20,-

000 industrial processes make use of gas.

Although the present era has often been called the age of electricity, nine times as much energy is produced in the United States each year by gas as is produced by electric power.

With the discovery of the great oil fields in the Texas Panhandle, natural gas engineers were called into a meeting. They were told:

"Some way must be found to use this gas. We'll have to pipe it to Kansas City and St. Louis—maybe to Chicago and even Detroit."

Laughter greeted this statement. One man jumped to his feet and exclaimed:

"Why, it can't be done. No pipes are made strong enough to stand the pressure for a thousand miles. And besides, how will you cross the Missouri and Mississippi Rivers?"

But it was done. The great American steel industry developed new and stronger pipe. Automatic ditch-digging machines carried the lines nine hundred miles to Chicago; twelve hundred miles to Detroit. Tremendous quantities of gas, both natural and manufactured, are being stored in the vast underground chambers which nature has provided for the purpose—the exhausted gas deposits of yesterday. One abandoned gas field now used for storage has a capacity greater than all the steel gas-holders in the United States. When manufactured gas is stored in these underground reservoirs it actually absorbs energy from the rock sands in which the natural gas had been stored for aeons of time.

Experts tell me that while some day our natural gas resources will be exhausted, under the present careful management our great deposits should last for many years to come. It is not impossible that at some future time the coal and gas industries may be combined in one great industry to supply power for man's requirements, because coal is most efficiently and economically used when it is carbonized and the gas piped to home, office and factory.

It is typical of the spirit of cooperation in modern American industry that today the producers of natural and manufactured gas are united in the American Gas Association. This Association maintains laboratories in Cleveland and Los Angeles, where

(Continued on page 120)

Wanted: A Personal Introduction to Your Friends*

SHE was getting some of those curls that make the men chuckle as they cruelly throw the hooks of their logic into shining finger waves: "What do you mean —permanent? You're always having it set, whatever that is, and the first thing I know you say you need another *permanent*!"

Conversation in a beauty shop touches on many things, including married life, of course. The girl who was winding wisps of wet hair on curlers had been married only a few weeks, and like many another modern was a wife with two jobs.

"Well," asked the permanent getter, "how do you like cooking?", as talk veered to the new bungalow, chintzes, china and kitchen.

"Fine! But it's all new to me."

"And do you have a range with an oven regulator?"

"You bet!" was the quick response. "I wouldn't know how to cook without setting the temperature. I get a lot of housework out of the way while the meals are baking without any watching. They're good, too."

That's the kind of true confession to make somebody else want modern gas equipment. That's the kind of story the American Gas Association is putting into millions of homes throughout the United States, when the postman rings and when news stand purchases come in with the steak and spaghetti. In the second year of a well-organized advertising campaign, the gas industry is publishing full-page, two-color dramatizations of life in the gas-modernized home, using popular magazines—*The Saturday Evening Post, Life, Good Housekeeping, Woman's Home Companion, McCall's, Pictorial Review, American Home, Better Homes and Gardens, House and Garden,* and *Home Beautiful.* Men who design, build and equip homes see the same advertisements in *Architectural Forum, American Builder and Building Age, Domestic Engineering, Plumbing and Heating Trade Journal,* and *Gas Appliance Merchandising.* They're put before women whose business it is to know and recommend the newest and best in housekeeping, through their *Journal of Home Economics, Practical Home Economics,* and *What's New in Home Economics.* More than eighteen and a quarter million people will be reached in this 1937-38 advertising drive. Some of the ads spotlight ranges only; others co-star the "4 big jobs," cooking, house heating, hot water service, refrigeration. Each one has a coupon offering an entertaining, chatty booklet, *Planning the World's Easiest To Keep House,* which can also be secured at our company offices. The A. G. A., besides, is working hand in hand with editorial and feature writers to give gas modernization the emphasis it deserves in the articles they publish in magazines and newspapers on home planning and furnishing.

Employee Boosters

As individuals, as well as a company, we gas employees can get behind this campaign that comes into our homes with the stories we read. It's so easy it seems almost unnecessary to mention how—just by bringing these ads to the attention of our friends and suggesting that they look over the equipment in company or dealers' showrooms. Naturally, this is most effective when we use these modern appliances ourselves, and our enthusiasm just spills over into the afternoon tea or cocktail and the midnight snack. With the chance we have through the company's generous cooperation in purchasing and financing home equipment, we're just cheating ourselves if our households limp along on worn-out ideas. More and more of us are waking up to this and waking up our homes to better living, as shown by the growing list of new owners of gas heaters and other present-day conveniences.

There's no mystery about the Mystery Chef's magnetic appeal when he's on the air for gas cooking. As thoroughly as he knows his groceries that he combines in culinary masterpieces, he knows the modern gas range. He keeps one plenty busy in his penthouse apartment. First taking the air for the gas industry in December 1935, as headline news in the first year's advertising drive, he's pulling many requests for his cook book, *Be an Artist at the Gas Range.* Some 5,000 copies have been given out to customers in our own offices. He's now broadcasting Tuesdays and Thursdays from 11:45 a.m. to 12 noon, Station WEAF.

Our newspaper, mailing and display advertising program on modern gas conveniences, featuring merchants in our communities, ties in closely with the national A. G. A. campaign, stimulating business for dealers and for the company.

"Say, did you see this ad in the *Post*? Just about like our range—and, boy, what meals that outfit turns out!"

That's the spirit—a personal introduction to our friends for these advertisements in national magazines. Let them see, too, that we're proud to be part of this up-and-doing gas industry, bringing news of its services sincerely and effectively into millions of American homes.

* Reprinted from "Central Hudson Bulletin."

Bigger Breakfasts Get a Break

Cooking breakfast the modern way—on a gas range

OLD-FASHIONED hearty breakfast dishes that "stood by" our forefathers again are in fashion because modern homemakers consider it scientific and sensible to prepare a more nourishing meal than the customary short rations of toast and coffee.

Miss Jessie McQueen, home service counsellor, American Gas Association, who, during a recent visit to many localities found that homemakers in general say the sketchy breakfast does not pay dividends in efficiency for the work of the day, be it in office or schoolroom. With a modern gas range in the kitchen, breakfast may be prepared in as little as ten minutes and certainly in not more than twenty minutes, according to the menu selected.

When occasional late rising demands high speed in the culinary quarters, the quickest breakfast is that of scrambled eggs and bacon, toast and coffee made in the coffee-maker, using tap water. Miss McQueen points out that many housewives have proved in daily tests that this menu can be ready in six to eight minutes, due to the instant heat in top burners on gas ranges.

The broiler breakfast is increasingly popular because toast, plain or French, and bacon or thin slices of ham may be prepared quickly. No longer is it necessary to preheat the broiler compartment, for the moment a new-type burner is ignited, full temperature is directed upon the rack of food, placed in the lowest position. The even heat from the flame is imparted in all directions, resulting in uniform broiling and browning.

Hot breads that vary the morning menu may be baked in a very short time if the biscuits are small and muffins are baked in the small-size tins. Up-to-date burners of the modern gas range designed to preheat the oven to the desired temperature quickly reduce the baking period so that the element of time is of little consequence in preparing breakfast.

A Gas Cooker of 1836

(From *Gas Journal*, London, January 19, 1938)

THE issue of the *Royal Leamington Spa Courier and Warwickshire Standard* of Jan. 14 reprints an article taken from a publication (the source is not disclosed) of 1836 in which there was a report of a lecture by Mr. James Sharp, of Northampton, delivered at Leicester before members of the Mechanics' Institution. The subject was cooking by gas, and the lecturer "described the apparatus before his audience, first pointing out the boiler, containing four gallons of water, which was kept at a boiling point by a ring of gas flame underneath, scarcely half an inch in height. On each side of the boiler was a capacious steamer in one of which Mr. Sharp announced his intention of cooking a salmon, a plum pudding, a piece of bacon, and a fowl, adding that each should have its genuine flavour when cooked, neither tasting nor smelling of the other kinds of food.

"This was doubtless a startling assertion, and he hoped they would defer their judgment till the close of the lecture, when he intended to serve up supper to as many as would honour him with their company. His steamers being in immediate connection with the boiler, very little condensation water collected; and there being no medium to convey the flavour was the reason that the different articles of food were untainted. The boiler would also supply hot water for all purposes; and on the top, several small saucepans were arranged for preparing sauces, boiling eggs, etc. The roasting apparatus consisted of a tin case about four feet high by two feet square, with a door opening in front. At the bottom was circular row, about 15 in. in diameter, of gas burners over the centre of which a leg of mutton was roasting, and at the top was an oven containing an apple pie. By his plan, the meat neither required turning nor basting, owing to the facility of regulating the heat; the dripping, too, was most valuable, on account of its purity, and would always pay for the gas consumed in cooking.

Advantages of Gas in 1836

"One of the advantages of gas was that the fire could be regulated to the greatest nicety by increasing or diminishing the supply of gas at the turncock. Cooking by gas requires no attention; the cook knowing at what hour she wanted the dinner to be ready and how long each dish would take to do, had only to put down each dish at a proportionate hour, after which she might go out, and lock up the house until the hour of taking up the dinner. By this means one person could prepare a large dinner without assistance, which rendered cooking by gas very advantageous for large establishments."

The gas was speedy and economical in those early days of the industry is evident from the following:

"Mr. Sharp also exhibited a small apparatus with three different reservoirs for heating water, beer, wine and other liquids, by which a glass of cold water was raised to 111 degrees of heat in five seconds, according to the watch of one of the spectators. The gas flame which heated it was almost invisible, and cost only one halfpenny for 12 hours' constant burning."

Gas Refrigerators in New Apartments

FOURTEEN of the 21 apartment buildings which are under construction at the present time in territory of The Brooklyn Union Gas Co. will have gas refrigerators in every apartment. The builders of the fourteen apartments already have signed contracts with the company calling for a total of 952 gas refrigerators, according to Willard C. Wolff, wholesale sales supervisor.

Domestic Gas Water Heating Research Forges Ahead

By F. J. RUTLEDGE
Chairman, Committee on Domestic Gas Research

F. J. Rutledge

WHILE enjoying the generous support of the Executive Board and the active cooperation of a large group of manufacturers and utility men, the Domestic Gas Water Heating Research project now being conducted at the A. G. A. Testing Laboratories by the Committee on Domestic Gas Research is perhaps not thoroughly understood in all of its aspects by the industry at large. The primary purpose of this article is, accordingly, to state the objectives of this gas research project as well as the procedure adopted to ensure its successful conduct and completion. It is proposed, also, to touch very briefly on the technical findings made up to this time, principally for the purpose of showing the nature of the work being undertaken.

Manufacturer Research Encouraged

In entering this field of research, it was recognized that achievements in gas water heater development and engineering had been considerable and that, far from being satisfied with past accomplishments, manufacturers were attacking technical problems with even greater vigor and resources than before. It is stated only for emphasis, therefore, that selection of this use of gas as a subject for fundamental technical study in no way reflected on the scope of research or engineering work carried on by water heater manufacturers. Nor was this domestic gas research project designed in any way to supplant or make unnecessary a continuation of individual efforts. It was hoped, rather, that it would encourage even greater research activity on the part of manufacturers and utilities alike by providing hitherto fundamental technical data as a basis to assist in such activity.

On this basis, it naturally followed that the Domestic Gas Water Heating Research project would have to be carefully directed so as not to encroach on a field already adequately served, but to cover a quite limited although important sphere of investigation. The scope of the project as authorized by the Executive Board includes those phases which it was felt would develop basic technical data on essential performance characteristics. Development of such information as might be termed "handbook data" would it was believed serve a dual purpose in first making available to manufacturers information not generally produced from the type of research ordinarily conducted by them; and second, in freeing their research appropriation and personnel for indispensable product development and engineering work. This objective is obviously one of considerable magnitude, and will as a consequence require a long period of time for consummation.

Cooperative Projects

Cooperative research of the nature indicated in the foregoing is conducted in our own and other progressive industries. For example, the Association's Committee on Industrial Gas Research, has for a number of years sponsored investigations at well known universities and at the Testing Laboratories; these studies being designed to develop hitherto unknown fundamental information useful to manufacturers of industrial gas equipment and to those utilizing such equipment. Results of such studies of high temperature gas combustion among other projects, and their application in heat treating, ceramics, enameling, and other fields have been recognized as a notable contribution to advancement of the art, and have not supplanted individual research activity, but have encouraged and stimulated further work. Another outstanding example of cooperative research by industry is the extensive and thorough work sponsored by the American Society of Heating and Ventilating Engineers. The scope of investigations by this organization in the fields of heating, ventilating, and air-conditioning, has been extensive, and has enabled manufacturers to concentrate more extensively on product development.

Committee Control

The Committee on Domestic Gas Research exerts active control over research work conducted for it at the Testing Laboratories. Before inauguration of this project for instance, complete outlines embodying each phase of research to be undertaken were prepared and thoroughly considered. As the work progresses, reports covering results obtained are prepared periodically for review by the committee. In this manner, the committee not only keeps abreast of investigational work, but is enabled to revise the scope of such work from time to time or alter its direction.

The committee has manufacturer representation, and conduct of the research to the best interests of manufacturers is even more adequately ensured through the Manufacturers' Technical Advisory Group for the Domestic Water Heating Research project. This group, of which L. R. Mendelson is chairman and which is comprised entirely of manufacturer representatives who have been appointed especially for this purpose by the Association of Gas Appliance & Equipment Manufacturers, reviews all reports and makes

such recommendations as it sees fit to the main committee. Cooperation of the advisory group has been beneficial to the entire program.

During 1937 periodic progress reports were prepared by the Testing Laboratories on the water heater project. These reports were thoroughly reviewed by the Technical Advisory Group and approved by that body. Investigation work is being continued by authority of the Executive Board. When, in the opinion of the Committee on Domestic Gas Research in consultation with the Technical Advisory Group of Manufacturers, sufficient data have been procured to warrant it, technical bulletins summarizing such data will be published for distribution to the industry. Soundness of basic technical data to be contained in the bulletins and their usefulness to the manufacturers seem to be adequately guaranteed by this committee procedure. This control should also serve to prevent activities trespassing beyond that line of demarcation between basic industry technical research on the one hand and manufacturers product research and development on the other.

The nature of studies as outlined by the committee may be illustrated by consideration of two phases of the problem which have about been completed. One of these was the investigation of service efficiency characteristics of automatic storage gas water heaters. During this work efficiencies of several representative types of heaters were determined under several conditions of excess air concentrations and input rates on each heater.

Equipment and samples of some materials employed during insulation study on domestic gas water heaters

Thermal efficiency and standby loss tests were also conducted on these appliances under corresponding conditions and in accordance with methods outlined in the American Standard Approval Requirements for Gas Water Heaters. During the service efficiency work, separate tests were conducted on each heater for three different total quantities of daily hot water draw, and each total draw was in turn made in conformance with two predetermined schedules governing intervals between draws and amount of individual draws.

Results of the investigations outlined in the preceding paragraph serve to confirm previously accepted but not definitely proven relationships and to establish several facts not heretofore encountered in the literature on the subject. It was shown, for example, that computation of service efficiencies on the basis of thermal efficiency and standby loss test results and in accordance with an equation* which was developed in the course of the work of the Approval Requirements Committee agree reasonably, although not always closely, with service efficiencies determined from actual draw-off tests.

The significance of this relationship is that in laboratory testing considerable time can be saved by conducting thermal efficiency and standby loss tests on gas automatic storage heaters, since from these data the performance curve for the appliance can be calculated for any desired range of total daily hot water draws. Conversely, a service efficiency test result applies only to the quantity of hot water actually drawn, and if a performance curve is desired at least two such tests would probably be required.† By

* This equation, the origin of which was fully discussed in an article appearing in the June, 1935, issue of the A. G. A. MONTHLY, follows:

$$E_c = \frac{W\,(T_2 - T_1) \times 100}{\frac{W\,(T_2 - T_1)}{E_{ut}} + \left[24 - \left(\frac{W\,(T_2 - T_1)}{RE_{ut}}\right)\right] \times \frac{CST_R}{100}}$$

Where

E_c = theoretical service or overall efficiency, per cent,
W = total weight of water drawn during 24-hour period, pounds,
E_{ut} = uncorrected thermal efficiency of heater, expressed as a decimal,
T_1 = inlet water temperature, ° F,
T_2 = outlet water temperature, ° F,
$(T_2 - T_1)$ = temperature rise, ° F (may be assumed as 90° F),
R = input rate of heater, B.t.u. per hour,
C = storage vessel capacity, pounds,
S = standby loss of heater, per cent per hour, and
T_R = average temperature rise of stored water above room temperature, ° F (may be assumed as 90° F).

† Only two points would generally be required for a service efficiency—hot water draw (gallons per day) curve, since the origin provides a third point and, furthermore, the curve will be asymptotic to the heater's thermal efficiency.

establishing the practical validity of the theoretical service efficiency equation, a tool is provided with which manufacturers and utilization engineers may chart performance trends of various types and sizes of automatic storage gas water heaters for purposes of comparison.

Results of the service efficiency work also demonstrated that neither the frequency nor amount of individual draws exerted any appreciable effect on service efficiencies provided the same total quantity of water was drawn for each schedule during a 24-hour period. This conclusion applies only to the heater itself, since a system efficiency might well be affected by other variables, such as heat losses. The result is, nevertheless, also of importance in laboratory testing since it shows that if service efficiency tests are to be conducted, draws may be arranged for convenience rather than to duplicate some condition more typical of practical field usage.

Service Efficiency Findings

Findings made in connection with service efficiency studies are also believed to possess value apart from their application to laboratory testing. For example, it was developed during this work that the type of thermostatic control; that is, graduating or snap-acting, seemed to have no marked influence on the service efficiency yielded by a given heater. Again, it was indicated that a heater would yield about the same service efficiency result when adjusted to different nominal input rates, but with no constructional change. However, with two heaters each having comparable thermal efficiency and standby loss characteristics, the one having the lower input rate will produce the higher service efficiency. This behavior may be verified by inspection of the equation shown in the footnote.

Other results obtained in connection with the effect of total daily draw, input rate, and excess air on heater efficiencies will not be considered here since space limitations do not permit developing them completely, which would be necessary to avoid misunderstanding. However, one rather unexpected application of these latter results has been made in the Laboratories' regular approval testing activities and, in particular, on several lines of heaters having certain similarities but different input rates and storage vessel sizes. On the basis of these findings it has been found in these cases that certain tests which might otherwise have been applied could be omitted on certain sizes of heaters in the same series with resultant savings to the manufacturers whose products were involved.

Pilot Rate Study

A second step of the approved outline on the Domestic Gas Water Heating Research project that has been completed involved a study of the effect of varying pilot gas rates on standby loss characteristics of automatic storage gas water heaters. One result of this work seems to be of unusual importance and has, as far as can be determined, never before been brought out. It has been shown that change of pilot input rates from approximately the minimum rate necessary to provide satisfactory ignition of gas at the main burner to the maximum rate possible without producing either excessive stored water temperatures or incomplete combustion, has no appreciable effect on standby losses.

This conclusion has considerable practical significance, since it shows the fallacy of attempting to improve efficiency characteristics of automatic storage heaters by reducing pilot rates to a micro-adjustment point where ignition may be critical or hazardous. Obviously, the pilot flame should not be adjusted so high as to deposit carbon or to cause stored water temperatures to creep above the temperature setting. However, the pilot rate may be adjusted within the limits previously indicated without affecting the cost of hot heating service.

In addition to the phases of the water heating research indicated above there are two other phases now under way. These include (1) an investigation of the effect of different types, thicknesses, and densities of all common insulating mediums on heater efficiency, and (2) a fundamental study of principles governing aeration of burner flames and venting of flue gases. The first mentioned is near completion and considerable data have been obtained on the second.

Range Research

It seems appropriate to mention that there is being conducted simultaneously with the water heating research a fundamental research program on domestic gas ranges, also under the supervision of the Committee on Domestic Gas Research. This latter project was authorized by the Board in 1935 and a technical bulletin* covering results obtained during the first year's work was published in 1936. One division of this project, namely, a study of the fundamentals of burner design will undoubtedly be productive of data which will also be applicable to gas water heaters. It is also probable that other results from the two projects may be interchangeable to some extent.

It is hoped that the reader has gained a clearer picture of the aims and nature of the Association's fundamental research activities to promote the advancement of gas for water heating purposes. Any assistance in clarifying or amplifying the discussion to further this understanding will be gladly given. Communications for this purpose should be addressed to the Committee on Domestic Gas Research, at the Association's New York office. Additional data resulting from this research when disseminated will be made available to all concerned at the same time.

* Bulletin No. 7, Domestic Gas Range Research, A. G. A. Testing Laboratories. This publication is available to member gas companies and gas range manufacturers.

Kitchen Autobiography

Describing a new cook book in *Advertising and Selling*, Dec. 16, Augusta P. Finkelstein called it: "A joint kitchen autobiography, so to speak, a stirring record of mixed emotions and ingredients, full of intimate confessions and hitherto unrevealed secrets, running the complete gas-range of drama from low temperature to high exaltation."

The Latest from Hollywood

The three pictures at right reveal some comic moments in "Merrily We Live." Twenty minutes of hilarious action takes place in the "all gas glamour kitchen," a partial view of which appears below. Three gas ranges and two gas refrigerators are featured

First-run showings of "Merrily We Live," a Hal Roach-M-G-M comedy, will be in sixty Loew's Theatres in March. Complete tie-in suggestions have been forwarded to gas companies. Contact your local independent theatre for additional showings and write A. G. A. for tie-in ideas. The all-gas kitchen in "Merrily We Live" is, in Hollywood language, "gorgeous and gargantuan"

Bonita Granville, Alan Mowbray, Patsy Kelly and Marjorie Kane are featured in the above photographs

At left and above are "shots" from Columbia's Picture "Penitentiary," featuring Jean Parker, John Howard, Walter Connolly and, of course, a gas range and gas refrigerator

Above: Shirley Dean, as "Bonnie" in "Love on A Budget," and, may we add, a gas range

Cookies as only a gas range can turn them out appeal to Spanky McFarland and Darla Hood of Hal Roach's "Our Gang" fame

At left, scene from Columbia's picture, "There's Always A Woman," featuring Joan Blondell and Melvyn Douglas—and another gas range

Factors Contributing to the Trend in Residential Gas Consumption

Presented herewith is part of a report prepared by a subcommittee of the Committee on Market and Economic Research, under the chairmanship of John B. Reid, Columbia Gas & Electric Corp., New York, N. Y. The complete report has been published in Interim Bulletin No. 40 of the Commercial Section and is being distributed to all members of the Section. —EDITOR.

THE American Gas Association has caused to be organized under its Commercial Section, the Committee on Market and Economic Research with the specific task of studying recent trends in residential gas consumption. The work of that committee, now going forward, may be divided into three general categories:

1. The appraisal of the various methods by which causes for the decline may be determined.
2. The development and execution of a plan adopted as a result of the foregoing appraisal and the analysis of the results obtained.
3. The formulation of a corrective policy.

As a guide to the work contemplated by such an outline it has seemed desirable to review such material as is already available.

Greater Efficiency Factor

Attempts have been made to isolate and study one or another of the factors contributing to the decline of residential gas use. Among the studies of this character is a group done by The Brooklyn Union Gas Company. In July, 1933, E. J. Devlin determined from the analysis of a small group of accounts that the substitution of the average old range by the modern heat controlled insulated range involves the loss of approximately 5.4% of cooking consumption. It was possible to confirm these results by laboratory tests.

Another study made in Brooklyn undertook to analyze the losses in gas sales in one and two family houses between 1935 and 1936. From this it was concluded that the gains from house heating installations and the increase in number of customers were largely offset by the loss of sales for other domestic uses.

The net effect upon gross revenue was disproportionately greater, however, because much of the business gained yielded only 53 cents per M cu.ft. while that lost had formerly yielded $1.00 per M cu.ft. It was further found that the loss of gas consumption for uses other than house heating was the result of competition affecting chiefly the cooking and water heating loads. The major source of this competition was the oil burner, of which large numbers have been installed in the company's territory.

Oil Burner Competition

The Westchester Lighting Company also studied the problem of oil burner competition. In that territory it was found that prior to 1930 there was little oil burner water heating, but that since that time the growth has been extremely rapid. In 1932 a study of 200 customers who had changed from gas to oil for water heating showed that the average annual loss of revenue was nearly $83 per customer. (The magnitude of this figure is probably a reflection of the high per capita wealth of Westchester County.) In the early stages of the influx of oil burners the company found only its larger accounts were being affected but more recently the competition has also reached the smaller consumers.

Another factor influencing sales adversely in Westchester County has been the rapid increase in the number of gas customers living in apartment houses, where both heat and hot water are supplied by the house. At present nearly one third of the company's accounts are apartment dwellers whose average consumption is approximately 13 M cu.ft. a year as compared with an average of over 38 M cu.ft. a year for all customers. Furthermore apartment buildings are more adequately heated than they were ten years ago, thus precluding the wide use of space heaters which formerly obtained.

While studies made in Brooklyn and in Westchester do not provide a sufficiently wide base upon which to predicate a national hypothesis, it is apparent nevertheless that oil burner competition, particularly for water heating purposes, is one of the most destructive elements in the present gas situation. It is also seen that changes in living conditions and living habits may be worthy of additional study. The competition of electric ranges in those communities appears to be of little importance, thus far, but is a factor to be watched with care.

Customers Interviewed

The Utility Management Corporation has conducted studies in New Bedford, Massachusetts, Lockport, New York and in Columbia and Florence, South Carolina. The stated purpose of these studies was to determine the causes of the decrease in the use of gas by the average residential customer, the effect of the purchase of new gas appliances upon the use of gas, and the permanency of the automatic water heating load. These consisted of a combination of the analysis of company records of individual consumption and a customer interview to determine reasons for the changes in the use of gas service.

Among the facts revealed by these studies perhaps the most important is that economizing, less cooking and laundering, decreasing size of families and discontinued use of appliances are the principal reasons for the smaller consumption per customer. The majority of customers are making a conscientious effort to keep gas bills down. It is noted, however, that a relatively small percentage of customers are accounting for half of the decrease.

Taken together these observations mean that most of the loss is due to the successful competition of other fuels but that among many customers

who have not been affected by competition there is also a loss arising from changed living habits. Another small group of customers exists, however, which accounts for a large share of the offsetting gains. These are the users who have recently purchased additional equipment. It was observed that new appliances were not being added rapidly enough to completely offset the losses from the sources described.

A study of the replacement of old gas ranges by modern equipment led to the conclusion that consumption, rather than being decreased, was increased some 500 cu.ft. annually by such replacement. This tendency was observed in each of the communities studied.

In addition the surveys showed large numbers of gas appliances to be obsolete and few customers having any knowledge of the features and advantages of modern equipment. The tendency to use water heaters intermittently was also noted. As a result of these investigations operating changes have been made and sales programs are now being devised to rectify the conditions disclosed.

Living Habits Change

Approaching the problem chiefly from the standpoint of living habits, Public Service Electric and Gas Company (New Jersey) has deduced some interesting facts having an indirect bearing upon residential gas consumption. Consultation with chain store managers in the service area revealed that during the past ten years there has been a definite trend away from the consumption of roasts and a corresponding trend toward chops and other more easily cooked meats; that the use of fish has expanded steadily; that cooked cereals have given much ground to cold cereals and that the demand for baked products has grown substantially. Canned goods have supplanted home canning but are now in turn, being displaced by fresh vegetables which are available at reasonable prices throughout the year.

Another factor of importance is the increasing mobility of people. From data compiled by the New Jersey State Highway Department the company estimates that over 200,000 cars from Public Service territory are on the road each Saturday and Sunday from April to November and that a substantial number represent parties having one or more meals away from home. The release of domestic servants has also affected gas use adversely by reason of the fact that the housewife herself is naturally more economical in the use of gas than the servant. Further, large numbers of children are attending central schools from which they are unable to return home for lunch, and more married women are employed, both to the detriment of the mid-day load.

The consensus of opinion among commercial managers of Public Service is that oil burners have become the keenest competitors of gas water heating. Electricity, however, probably has not taken an appreciable part of the gas market.

Electric Inroads Negligible

A survey amongst a hundred or more housekeepers revealed that most of the electric ranges in the territory are in areas not served by gas and that electric space heaters are used in rooms not piped for gas. Electric percolators are falling into disuse while toasters continue to be used daily and waffle irons at fairly frequent intervals. Mechanical refrigerators may or may not affect gas consumption in so far as they are used in the preparation of frozen desserts. On the other hand two electrical appliances which are conclusively gas load builders are the mixer and the washing machine. Dish washers have not been perfected but may conceivably open the way for more gas water heating.

Somewhat similar conclusions are reported by The Peoples Gas Light and Coke Company in Chicago. A survey in that territory indicated an increase in the use of electrical equipment in the preparation of breakfast, an increase in the use of commercial laundries and a growing tendency to eat away from home on one or more evenings a week, especially during the summer. The electric range has had a negligible effect as may be seen from the fact that there are estimated to be some 600 in use in the area where the company has approximately 800,000 gas ranges.

Another recent Chicago study covering equipment in newly erected buildings points to the conclusion that the installation of gas house heating equipment results in the increased use of gas for other purposes. This increased use included water heating primarily as automatic gas heaters were found in 84% of the buildings using gas for central heating as against 40% of those using oil and 12% of those using coal.

W. S. Gaskill of American Light & Traction Company, studying the problem still differently, has reasoned that if all the electric ranges sold in the United States from 1931 to 1934 had displaced gas equipment the annual loss of gas revenue would have been only 15.7% of that actually sustained. This measure of the importance of electric range competition is supported by the opinion of the management of other companies that while such competition will become more important in the future, at present other factors are of greater influence.

Other conclusions of Mr. Gaskill's are that if the use of small electric appliances had increased 10% from 1931 to 1934 the loss of revenue to the gas business could not have exceeded 10% of that recorded. The efficiency of new equipment would have had to be 86% greater than that of the old equipment replaced to account for the loss of gas gross revenue. The loss can no longer be ascribed to the necessity for economy on the part of consumers since the increase of purchasing power has not been accompanied by greater use of gas.

Contributing Causes

There are other elements in the equation not susceptible of measurement including the reduction in home cooking and laundry work, the turning off of automatic hot water heaters, the reduction of incidental heating, the greater efficiency of use by customers (as distinguished from the greater efficiency of appliances) and the increase in the proportion of the total customers who do not pay their own way.

Admitting the inconclusiveness of his findings Mr. Gaskill closes his report appealing for further and more intensive research by quoting Professor Philip Cabot of the Harvard Graduate School of Business Administra-

tion. Professor Cabot in an address before the 1933 Convention of the American Gas Association urged market surveys as the basis for planning sound sales promotion and said "the changes which are constantly taking place in the cooking, water heating and house heating loads can be more readily analyzed by means of a market survey."

Surveys such as Professor Cabot recommended have been made under his direction. Copies of these were not available to the committee. Three others done by The Utility Management Corporation have been discussed previously. Another was done by Daniel Starch and Staff for Rochester Gas & Electric Corporation in April, 1937. Without attempting to describe the technique of obtaining the information* some of the more pertinent results may well be reviewed.

Gas Replacements Favored

It was found that only 46% of the company's customers are now using gas for cooking throughout the entire year and that 41% of the gas ranges are over 7 years old. Some 40% use combination coal and gas ranges giving the gas company load only during the summer months. Thus, 86% use gas for cooking regularly or irregularly.

The preference in replacing present equipment is predominantly in favor of gas (52%) although 27% would buy an electric range if the cost of operation were the same as that of a gas range. Coolness and cleanliness are the principal reasons given for the preference for electric cooking while speed and operating cost are the elements most favored in gas.

In the field of water heating 83% are using some type of gas equipment although only 3% are using automatic instantaneous heaters. These appliances are relatively newer than the ranges but only 43% are used regularly. Most (55%) would buy a gas heater to replace present equipment but 23% show a preference for coal and 17% for electricity providing there was no difference in cost.

Of the refrigerators in use only 39% are mechanical, 3% gas and 36% electric. Buying a new unit 11% would prefer gas as against 75% who would prefer electric. Strangely enough there are 9% who would continue to use ice.

A similar analysis of house heating showed hand-fired coal furnaces still in popular favor, followed closely by oil with only a small percentage giving consideration to gas. On the basis of equivalent cost of operation the preference was first for oil, second for gas and third for coal.

Salesmanship Paramount

The facts obtained, as summarized above, are indicative of the incursions into the gas market made by competing fuels. They also show further potential losses for the future. The large percentages of persons interviewed who indicated preferences for fuels other than gas for cooking, water heating and refrigeration show conclusively that much of the loss of the domestic gas business is the result of the astute salesmanship of these other fuels.

The survey might have been of even greater value in the solution of the present problem had it been designed to show how conditions have changed through the recent past rather than to depict the situation as it existed at a given time. In that case it might have been possible to discover whether the momentum of competition was increasing or not. Nevertheless it is this type of analysis which is particularly needed at the moment.

Another customer survey of a somewhat different style has been conducted by The Brooklyn Union Gas Company since the early part of 1934. This is in the nature of a perpetual inventory of customers' appliances. It has been compiled from information obtained by meter readers, and constitutes an accurate picture of the saturation of gas appliances on customers' premises from time to time. Some of the figures are interesting.†

Among 107,000 customers living in one-family houses 70% have non-automatic side arm water heaters, 11% automatic water heaters, 67% ice refrigeration and 28% electric refrigerators. Among 131,000 customers in two-family houses 56% have non-automatic side arm water heaters, 36% coal pot water heaters, 81% ice refrigeration and 16% electric refrigeration.

This information has been tabulated in such a way as to be of enormous value to salesmen by giving them actual knowledge of the customers' equipment. Direct mail advertising is more efficiently handled by circularizing only potential buyers. Furthermore, trends observable from the data will eventually give the company additional information of great value in the determination of its merchandising policies.

At present Brooklyn Union is reviewing some 80,000 of the names contained in its original survey with the object of determining the extent of oil competition in water and space heating within the territory and also of constructing a list of customers in good residential areas who still use coal for heating purposes of one sort or another.

One weakness of surveys of the types described is that they cover only the company's customers and give no indication of the character of the market lying beyond that limitation. Nevertheless they produce evidence to prove that a substantial market exists for modern gas equipment among existing consumers.

In Rochester the presence of large numbers of combination coal and gas ranges and of even greater numbers of tank water heaters and old fashioned ice boxes is a case in point. The average age of this obsolete equipment is in the vicinity of 10 years. In Brooklyn the proportion of the total customers using similar appliances is not greatly different. The presumption is that throughout the country conditions would tend to follow the same pattern. If so, it is apparent that even though the gas industry has been slower in its attempts to modernize the American home than either the electric companies or the oil burner manufacturers, it need not be left behind permanently.

* Described in 1937 Rate Structure Committee Report.

† Based on the original survey made in 1934.

R. G. Soper Married

THE marriage of Richard G. Soper, president of the Dallas Gas Company, to Miss Ruth Whiting Gregory, daughter of Mr. and Mrs. T. B. Gregory, of Pittsburgh, Pa., on February 14, 1938, in the Episcopal Church in Pittsburgh, has been announced.

After a short wedding trip, Mr. and Mrs. Soper will reside in Dallas.

A. G. A. Picture Page

Radio's Mystery Chef appears as a guest-lecturer at the Brides' School for young socialites in New York

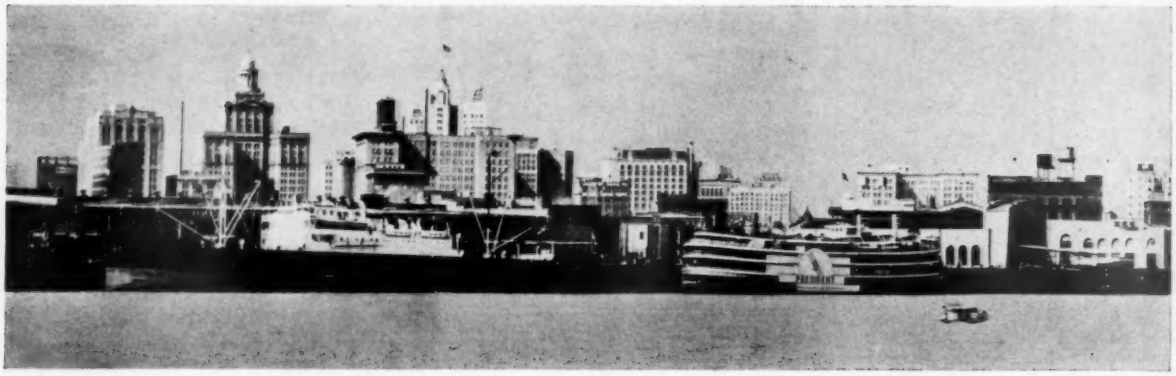
Spherical gas holder at Silkeborg, Denmark, being used l local educational authorities as permanent geography lesso

Salesmen of gas water heater division, United American Bosch Corp., attending a sales conference

F. M. Goodwin, vice-president, Boston Consolidated Gas Co leading part of the company's fine band at Christmas Eve festivitie

Below—Model gas kitchen at Summit commercial office of Public Service Co. of New Jersey

Below—Yorkville district office of the Consolidated E son Co. of New York which opened its doors on Jan.



View of New Orleans Waterfront

Natural Gas Men To View City Rich in Romance and History

By JAY C. BARNES

General Chairman,
Natural Gas Department Convention

PLANS far in advance of your arrival have been taking shape for four days of mutual pleasure and profit, and when the gavel is sounded for the opening session of the 1938 Natural Gas Department Convention of the A. G. A. May 9, New Orleans, your host city, bids to surpass all former conventions with a program offering interesting meetings, educational papers, and many attractive entertainment features.

When you come to New Orleans you will find it stands apart from other cities in its food, its architecture, its customs, its historical associations, its modern achievements and the many advantages that it offers for pleasure.

It is different, too, in that the people of New Orleans seem to be born with the knack of mixing business and pleasure without detriment to either. This knack is contagious to visitors.

Modern and progressive, antique and picturesque, New Orleans offers the contrast of an old and a new civilization. Do you like romance and history? New Orleans has it. Do you like the hum and throb of business and industry? She has that, too. If you like natural beauty, the City abounds with it. If you like good food and recreation, she is world famous for it. So prepare now to enjoy the greatest natural gas convention in the history of our association.

But think not only of New Orleans in terms of an Old City hiding behind a laughing mask, for it offers much that will be of direct interest to you of the gas industry.

New Orleans was the fourth city in America to employ gas for commercial

Convention committee members at luncheon during their one-day session, Jan. 20, at the Adolphus Hotel, Dallas, Texas. From left to right: J. V. Strange, W. T. Harter, Charles D. Greason, J. H. Dunn, Max Watson, E. L. Rawlins, R. G. Soper, Eugene D. Milener, H. E. Meade, H. L. Gaidry, Jay C. Barnes, R. W. Hendee (chairman, Natural Gas Department), E. H. Poe, Will C. Grant, A. L. Forbes, Jr., Julian L. Foster, George M. Parker, Fay C. Walters, Frank B. Long, W. Jennings Young, A. E. Higgins, W. G. Wiegel, L. L. Baxter, Streuby L. Drumm, and Chester L. May

and residential purposes. It was in 1819 when James H. Caldwell, an English actor, came to New Orleans and foresaw the brilliant dramatic future of this city. He at once built the American Theater, on Camp Street, which he lighted with the gas he remembered in England. This was the first building in New Orleans to use this new fuel for illumination. Many others soon followed.

Caldwell also organized the first gas company in New Orleans, the New Orleans Light and Banking Company. The site and many of the buildings of the original plant still stand and form a part of the plant of the present operating company.

Even today the same old iron gates guard the entrance and the same massive 12-foot brick walls, surround part of the old square, on which stood the first gas plant operated by slave labor.

Famous Natural Gas Fields

In marked contrast, and less than a day's trip from the City, are the world-famous Monroe natural gas fields, contributing a major share towards making Louisiana the second largest natural gas producing state in America.

Also less than an hour's run from the City limits, are located the world's deepest oil wells. Field after field in the parishes near New Orleans are coming into producing power each week.

Gas and oil people are looking upon Louisiana as a most favorable state for future reserve and assert that it offers greater possibilities than any other state in the Union.

A program containing subjects of particular interest, many of which will dwell on new phases of our industry, will be presented at the New Orleans meeting. An example of some of the new issues to be discussed will be a session on conservation. New uses of gas in the commercial field will also come in for a great deal of attention. Sales promotion, including a Domestic Sales Section, will likewise be discussed.

The program is designed to appeal not only to the men, but will include many features of direct interest to women. A Home Service luncheon on the morning of May 10, conducted by Mildred R. Clark, outstanding domestic science expert, and a Home Planning Section will be of particular interest to women in the gas industry.

Different, too, are the entertainment features of the program. Monday evening, May 9, a boat ride and dance has been planned aboard the beautiful and spacious Steamer President on the mighty Mississippi. This will afford an opportunity of glimpses of the port facilities of the nation's second port, while combining a romantic ride under the moonlight and dancing to the strings of one of the nation's best orchestras. Another attraction of the entertainment program will be a gala dance Wednesday night, May 11.

The sessions have been so arranged to afford the delegates and their ladies ample time for sight-seeing trips about the city.

Certainly, you'll want to visit the "Vieux Carre" or Old French Quarter, with its narrow streets and "banquettes" as sidewalks are still called, the hoary buildings with their myriad shaped roofs and chimneys, the iron-trellised balconies, the sweeping fan windows and the beautiful courtyards which make this section of the city so rich in appeal.

A visit here will recall the deeds of Bienville, the explorer, Almonaster y Roxas, the philanthropist, Lafayette and Jackson, the soldiers, Lafitte, the buccaneer, Lind and Patti, the singers, Edeson and Sothern, the actors, Cable and Twain, the writers, and many other romantic and historical characters.

You'll want to see Jackson Square, the hub of the old quarter, surrounded by such historic buildings as the Old Spanish Cabildo, where the Louisiana Purchase was consummated; the St. Louis Cathedral built in 1794 still in use; the Pontalba buildings, America's first apartments.

Then in uptown New Orleans is the Garden District with its lovely antebellum homes. Along Bayou St. John are old plantation homes. The recently completed 50-mile marked Visitors Route will give you an idea of why New Orleans has so often been referred to as "The City Unique."

Aside from the benefits derived from the convention sessions there is so much to see and do in New Orleans that you cannot afford to miss the 1938 Natural Gas Convention!

New Orleans Convention Plans

PLANS for the New Orleans Convention of the Natural Gas Department to be held May 9-12, took definite shape at the meeting in Dallas, Texas, of the Arrangements, Program, Publicity, and other Convention Committees. Robert W. Hendee, chairman of the Natural Gas Department, presided over the conference.

The slogan of the Annual Convention of the Natural Gas Department is "Our Job Is a Selling Job." Those attending this convention will hear much about "Home Modernization," "Home Planning," "Dressing Up the Kitchen," both commercial and domestic. "Home Service," "The World's Fair in New York," and "Analyzing the Mass Market for Sales Campaigns," are also features of the program. Then there will be more about Automatic Heating—Commercial Hot Water Heating, and "How To Get Full Results from Sales Contests."

They will also hear a balanced program on "Natural Gas Conservation" and all of its ramifications. "Human Engineering in Industry," "Liquefied Petroleum Gas Sales," and up-to-the minute papers covering advancement in methods of production and transmission of natural gas. Technical and research results will be reported. "Promotion Is the Keynote to Success," "The C-P Range," and "Air Conditioning" will be prominent on the program. These and many other interesting topics will be presented and discussed by leaders from both within and without the industry. There will be ample entertainment in the typical New Orleans hospitable way. The New Orleans Committee says, "May Time Is Play Time in New Orleans."

One of the most interesting contributions to the work of the convention is expected to be found in round-table luncheons in which groups representing several phases of the industry will meet to discuss their respective problems. Included among these luncheons will be a luncheon meeting devoted to the "Home Planning Program" of the American Gas Association, "Home Service," and others. The program is designed to bring the industry up-to-date in its every phase, Production, Transmission, and Sales and Utilization.

Indiana Gas Association

THE 1938 convention of the Indiana Gas Association will take place in Gary, Ind., May 16 and 17, according to an announcement by Paul A. McLeod, secretary-treasurer. Headquarters will be at Hotel Gary. The chairman of the program committee is Ed. Weston of Richmond while A. V. Grief of Gary will be in charge of local arrangements.

Book Reviews

The National Fire Codes for Flammable Liquids and Gases, 1938. Compiled by Robert S. Moulton. Published by National Fire Protection Association, Boston, Mass. 360 pages. Price, $1.50 postpaid.

This volume includes the thirty-six standards and regulations giving fire protection authorities complete information on the safe handling of both flammable liquids and gases. The several codes are in the form of suggested ordinances, regulations, or recommended good practice requirements and are purely advisory as far as the National Fire Protection Association is concerned, but are widely used as a basis of law, or as a guide by administrative authorities in the exercise of their discretionary powers, as well as for insurance purposes. Prepared by technical committees including engineers representing all major interests concerned, they are universally accepted as the authoritative guides to the best practice in fire prevention and fire protection.

Typical examples of the thirty-six standards are: flammable liquids ordinance, marine oil terminals, tank truck ordinance, oil burner regulations, kerosene or oil stoves, liquefied petroleum gas code (propane and butane), dry cleaning and dry dyeing, paint spraying and spray booths, city gas, gas systems for cutting and welding, and fire hazard properties of flammable liquids, gases, and volatile solids.

Gasbeleuchtung. Handbook prepared by D. V. G. W. Berlin. 98 pp. 93 illustrations. Published by R. Oldenbourg, Munich. 4.50 RM plus postage.

Whenever a handbook is produced by representative committees of a trade association something of good value is bound to result from a study of this work. This is as true of this new handbook by a committee of the DVGW as of the Industrial Gas Handbooks of our own association.

Gas illumination or gas lighting is a subject which unfortunately will find too few interested readers among the members of our association. It follows the usual formula of any handbook, namely, treating the theory and mathematics of the subject in the beginning, discussing the application of the equipment to the problem, describing in great detail the appliances and equipment available for fulfilling the need and finally giving actual photographs and records of representative installation.

The mathematics of lighting has been carried out in a simple but complete manner and the results are made available for use by even the novice through tables of the geometric relations which are necessary for the solution of the various lighting problems.

Unfortunately this handbook will not receive the attention which it deserves partly because of language difficulties but more particularly because of the lack of interest in the subject of gas illumination. What is needed in this country at this time is not a technical handbook describing what to do about gas illumination but an awakened consciousness on the part of gas companies and combination companies not only to the economics of the situation favoring the use of gas lighting but that the results themselves are superior for practically every purpose including street lighting, spot lighting and display lighting.

—A. M. APMANN.

Noted Research Chemist Is Dead

Dr. Thiessen

DR. R. THIESSEN, research chemist for the U. S. Bureau of Mines and a resident of Pittsburgh for many years, died January 30. Dr. Thiessen was one of the world's leading authorities on the origin and constitution of coal.

Under Dr. David White of the Technologic Branch of the Geological Survey, Dr. Thiessen began the study of coal by developing a system for the preparation of transparent thin sections of coal for microscopic study. When the Technologic Branch was made a part of the Bureau of Mines, Dr. Thiessen was transferred to the Pittsburgh Experiment Station.

He was awarded a silver medal in 1925 by the Royal Society of Arts, London, for his noteworthy achievements in coal research. In 1928 he received the honorary degree of Doctor of Science from Lawrence College. He was a loyal and active member of many clubs and organizations, including the American Chemical Society, Botanical Society of America, American Institute of Mining and Metallurgical Engineers, the American Association for the Advancement of Science, and others.

J. A. P. Crisfield Dies

J. A. P. CRISFIELD, president of the Savannah Gas Company, died January 6, in Savannah, Georgia. For forty years, prior to 1928, Mr. Crisfield had been associated with The United Gas Improvement Company. He was a native of Chestertown, Maryland.

A graduate of the Stevens Institute of Technology, class of 1887, Mr. Crisfield became a cadet engineer of the Mutual Gas Light Company, now the Savannah Gas Company and at that time part of The United Gas Improvement Company system. Mr. Crisfield became superintendent of the Savannah Company in 1892. He became engineer in charge of design, The United Gas Improvement Company, in 1899, and when The U. G. I. Contracting Company was organized he became vice-president of that company, in charge of engineering. He relinquished the latter position to return to Savannah as president of the Savannah Gas Company in 1925.

In June, 1937, the Stevens Institute of Technology conferred upon Mr. Crisfield the honorary degree of Doctor of Engineering.

George H. Bradley Passes

GEORGE H. BRADLEY, utilities executive, banker and pioneer oil producer, died in Bolivar, N. Y., Feb. 5. He was seventy-three years old.

Born in Springboro, Pa., Mr. Bradley went to that section during the oil boom in 1881 and obtained a job as a teamster. From this start, he worked his way up in the oil and gas fields of southern New York and northern Pennsylvania. At the time of his death he was a member of the board of directors of three Alleghany County banks and was treasurer of the Empire Gas and Fuel Company and the Bradley Producing Company.

New Jersey Send-out Largest Since 1932

SEND-OUT of gas by Public Service Electric and Gas Company, operating in New Jersey, was larger in January, this year, than in any other month since April, 1932, and totaled 2,179,533,200 cubic feet. This was an increase of 151,424,400 cubic feet, approximately 7½% over the total for January, 1937. The total for April, 1932, was 2,202,295,700 cubic feet.

"Designed for Cooks—and Looks"

UNDER the above title a double-page feature article discussing new gas ranges appeared in the March issue of *McCall's Magazine.* Prepared by Kathleen Robertson with the assistance of Elizabeth Sweeney, home service director, New York State Electric and Gas Corp., and past chairman of the A. G. A. Home Service Committee, the article carries a significant message to the 2,700,000 housewives who make up *McCall's* readers. The first paragraph is typical:

"You stand in your kitchen and in imagination slip one of those sleek new gas ranges neatly into place. You heave a sigh of satisfaction. It's so grand just to look at, with its gleaming porcelain and metal, its pleasant lines, and, best of all, its comforting air of competence, of being able to perform superlatively any task you set to it."

Personal and Otherwise

Joins Chicago Company

E. A. Nicol

ERIC A. NICOL, formerly manager of personnel, The Philadelphia Gas Works Company, has been appointed assistant director of Employee Relations, The Peoples Gas Light & Coke Company.

Mr. Nicol was educated at Columbia and New York Universities and is now a member of the faculty of the Industrial Relations Association at Princeton University and a special lecturer at the University of Pennsylvania. He was largely instrumental in establishing the American Gas Association Personnel Practices Committee and served in the capacity of chairman for two years.

Mr. Nicol, well known in industrial relations circles, went to The Philadelphia Gas Works Co. in 1932 from Western Union Telegraph Co. where he was for 6 years manager of personnel for the Metropolitan Division in New York. During his service in Philadelphia he was for four years president of the Industrial Relations Association and chairman of the Industrial Relations Committee of the Chamber of Commerce.

Central Indiana Changes

R. G. Hayler

EFFECTIVE February 1, the Central Indiana Gas Company had a new departmental setup, H. Carl Wolf, president, has announced. Several promotions of personnel were involved in the new arrangement.

On that date, the resignation of E. G. Peabody as general sales manager became effective. Mr. Peabody went to the Citizens Gas & Coke Utility in Indianapolis in the same capacity he held with the Central Indiana company. Replacing what was previously the sales department, is to be a general commercial department, headed by Rodney G. Hayler of Muncie.

The new department will embrace commercial activity of all kinds, whether merchandise or service. F. E. Caton will be assistant commercial manager, specializing in merchandising and space heating. L. E. Bracken will become advertising manager.

Mr. Hayler has been employed in all phases of the gas business for the past 27 years. Since 1925 he has engaged in industrial engineering, from which post he was promoted. He will, however, continue his industrial contacts, taking on as added duties the supervision of the entire commercial program of the company and its affiliates.

Indicative of the high regard in which he is held, Mr. Hayler was elected vice-chairman of the Midwest Section of the Industrial Gas Sales Council of the American Gas Association at its regular quarterly meeting in Chicago, Friday, January 21.

A. G. A. E. M. Director

W. E. DERWENT, vice-president, George D. Roper Corp., Rockford, Ill., was elected a director of the Association of Gas Appliance and Equipment Manufacturers at a recent meeting of the Association's board. Mr. Derwent will serve as chairman of the group's dometic gas range division.

Joins Engineering Co.

L. L. CRAHAN has resigned as industrial fuel engineer of the Portsmouth Gas Co., Portsmouth, Ohio, to become a representative for the Eclipse Fuel Engineering Co. of Rockford, Ill. Mr. Crahan's territory will include Minnesota, northern Iowa and western Wisconsin, with headquarters in Minneapolis.

E. G. Peabody Named Sales Manager

E. G. PEABODY, formerly general sales manager of the Central Indiana Gas Company at Muncie, took charge of the Indianapolis Citizens Gas and Coke Utility sales departments February 1. He succeeded Fred G. Restenburg, who resigned January 1.

During the five years that Mr. Peabody directed sales for Central Indiana Gas Company, the company did one of the outstanding utility merchandising jobs in the nation. In 1937 his sales force won one of the awards made in the gas refrigerator national sales contest and his 1937 record of merchandising sales per domestic meter was one of the highest achieved by any gas company.

Mr. Peabody is a director of the Indiana Gas Association, a member of the American Gas Association refrigeration committee and a member of the Indiana association's commercial committee.

Named Manager of Hoosier Gas Corp.

S. V. O'Lenic

THE appointment of S. V. O'Lenic as manager of the Hoosier Gas Corporation has been announced by H. Carl Wolf. The corporation operates in three Indiana towns, Vincennes, Princeton, and Washington.

Mr. O'Lenic has had 12 years' experience in the gas business. Following his graduation from the Carnegie Institute of Technology in 1927, he became construction engineer for the Central Illinois Electric & Gas Company of Rockford, Illinois. Two years later he joined the Stone & Webster properties in Alabama, Mississippi, and Florida as division manager.

In 1931 Mr. O'Lenic became manager of the Selma, Alabama, property of Alabama Utilities, and in 1933 manager of the Rome, Georgia, property of Georgia Public Utilities, where he remained through 1936. For the last year he has been with the Stone & Webster Service Corporation in New York City as engineer in the rates and analysis department.

Made Personnel Manager in Philadelphia

C. G. Simpson, Jr.

CHARLES G. SIMPSON, JR., formerly assistant to manager of the personnel department, The Philadelphia Gas Works Co., has been appointed manager, succeeding E. A. Nicol who resigned to join The Peoples Gas Light and Coke Co., Chicago. Mr. Simpson has been employed by the Philadelphia company since 1925 He became assistant to manager of the personnel department on May 1, 1934, after holding various positions in the company.

Mr. Simpson is a new member of the Committee on Personnel Practices of the A. G. A. He is also secretary of the Industrial Relations Association of Philadelphia and president of the Philadelphia Foremen's Club.

Hudson Named Sales Manager in Texas

W. A. Hudson

WILLIAM A. HUDSON has been appointed general sales manager of the Houston Gas and Fuel Division, United Gas Corporation. Mr. Hudson formerly was connected with the Birmingham Gas Company and is an active member of the American Gas Association.

A graduate of Vanderbilt University, Mr. Hudson was active in civic affairs in Birmingham. He entered the public utility business in 1925 with the Birmingham Electric Company and in 1932 was appointed general sales manager of the Birmingham Gas Company. During recent years, the sales department of that company under Mr. Hudson's direction won four national gas refrigeration contests conducted by the American Gas Association.

Heads Atlantic States Co.

APPOINTMENT of Colonel George A. Burrell as president of Atlantic States Gas Company, Inc., a subsidiary of Commonwealth and Southern Corp., was announced February 23. Colonel Burrell, war-time head of all chemical research for the United States government and consultant to the Soviet government in the development of the Baku oil field, was also elected a director of West Virginia Gas Corp. and Kenova Gas and Oil Co., other Commonwealth subsidiaries.

Director of Refrigerating Engineers' Society

Dr. Hainsworth

DR. WILLIAM R. HAINSWORTH, vice-president of Servel, Inc., in charge of engineering, was re-elected as a member of the board of directors of the American Society of Refrigerating Engineers, at its annual meeting in the Hotel Baltimore on January 26.

Dr. Hainsworth joined the Servel organization before the placing of the Servel Electrolux gas-operated refrigerator on the market in 1926, all the scientific work in connection with the development and improvement of the refrigerator having been carried on under his direction.

For developing the air-cooling principle, a feature of the Servel Electrolux gas refrigerator, Dr. Hainsworth received the 1933 Charles A. Munroe award, granted annually by the American Gas Association to persons who make outstanding achievements that benefit the gas industry.

Executive Changes

CONSOLIDATED Gas Electric Light & Power Company of Baltimore has announced the following executive changes: C. M. Cohn from vice-president to executive vice-president; Wm. Schmidt, Jr. from secretary and treasurer to vice-president; H. R. Cook, Jr. from general superintendent, gas operations, to vice-president; H. L. Gruehn from assistant secretary and assistant treasurer to secretary; J. H. Wolfe, from superintendent, gas manufacturing, to general superintendent, gas operations; and R. H. Arndt from assistant superintendent, gas manufacturing, to superintendent, gas manufacturing.

Personnel Report Praised

HAVE you secured a copy of the 1937 report of the Committee on Personnel Practices? Commenting on this report to Eric Nicol, chairman of the Committee in 1937, Alvin E. Dodd, president of the American Management Association, wrote, "The material presented in the various topics seems to us especially good." Such a comment from Mr. Dodd, a recognized authority in the field of industrial relations, is most significant.

Symposium on Meaning of Coal Tests

THIS symposium presented at the annual meeting of the American Society for Testing Materials, June 29, 1937, now published in convenient form, gives detailed discussions of the meaning of the results of tests of coal, through six extensive technical papers prepared by outstanding authorities. In addition to the papers, there is considerable discussion by other technologists.

Following the paper on interpretation of laboratory coal tests—proximate analysis and calorific value, there is discussion of the significance of sulfur in coal and also the significance of ash softening temperature and ash composition in the utilization of coal. Laboratory tests relating to caking, plastic, gas- and coke-making properties of bituminous coals and the significance of friability and size stability tests on coal are covered. Pulverizer performance as affected by grindability of coal and other factors forms the subject of the sixth paper. In addition to presenting the viewpoints of leading technologists, the publication also gives a large number of bibliographic references.

Bound in heavy paper cover, copies of this 132-page publication can be obtained at $1 each from A. S. T. M. Headquarters, 260 S. Broad St., Philadelphia, Pa.

Nantucket Has Problem

OCTOBER was a busy month for Nantucket's Board of Selectmen. Among other things, they voted to allow the Senior Club to hold a costume cabaret at Red Men's Hall, cabled the Duke of Windsor inviting him and his wife to come to the island if they were looking for a quiet place, and authorized the sale of the coal stoves formerly in the town-office building, these having been replaced by gas heaters.

This manifestation of progress was not appreciated by Town Treasurer Tirrell, who complained that the disposition of crows' heads which people brought in to him for the twenty-five-cent bounty, hitherto simply a matter of popping them into the stove, was now getting to be an irritating problem. After a few days, the Duke of Windsor cabled his regrets and appreciation.—*The New Yorker.*

Best-Looking President

As candidate for the best-looking corporation president in the United States, the gas industry presents Mrs. James G. Vandergrift, chairman of the board and president of Trojan Gas Company which produces natural gas in Logan County, W. Va. Just how Mrs. Vandergrift got into the gas industry is explained by the fact that her husband's business is the treatment of oil and gas wells with acid for the purpose of increasing production. His interesting experiments with oil and gas wells were reported in Time, *July 12, 1937. Mrs. Vandergrift's picture, together with her board of directors, was published in* Life, *Jan. 31, 1938.*

After the Gas Buggy Age

ACCORDING to the *Industrial Bulletin* of Arthur D. Little, Inc., Cambridge, Mass., steady, although slow, progress is being made in operating commercial motor vehicles with gas. The *Bulletin* states:

"Three interesting foreign developments in motor fuels that may be inferior to gasoline in some respects but of lower cost, are economically sound enough to justify interest in this country. These are the use of compressed gas, of producer-gas generated on the vehicle, and of pulverized coal.

The use of gas as such as a motor fuel started during the War, with the provision of large low-pressure collapsible fabric gas bags on the tops of French busses. Developments in metallurgy have since made possible the use of light-weight cylinders to carry compressed gas at 3000 pounds pressure. Those developed in England by the Chesterfield Tube Company for the City of Birmingham Gas Department are eight inches in diameter outside, six feet long, weigh 110 pounds, and carry 350 cubic feet of gas each. Six of these strapped to the underside of the chassis of a truck or bus, carry a gasoline equivalent of six to fifteen gallons, depending on the quality of the gas compressed.

Save Money with Gas

"City-gas at 25 cents per 1000 cubic feet is equivalent to gasoline at 9 cents per gallon after allowance for the cost of compression to 5000 pounds and for fixed charges on compressor equipment; natural gas at 25 cents per 1000 cubic feet is equivalent to gasoline at 4.5 cents per gallon on the same basis. With the present tax on gasoline and none on gas, it appears that a gas company could make money and a transport company in the same city could save money by the use of compressed gas.

"British experience over a period of several years with hundreds of busses has been very favorable. Gas is claimed to be the perfect motor fuel from the standpoint of ease of starting, freedom from vapor-lock, smooth and economical idling, good acceleration, freedom from gum troubles and carbon deposition, absence of crank-case dilution, and low carbon monoxide content of the exhaust.

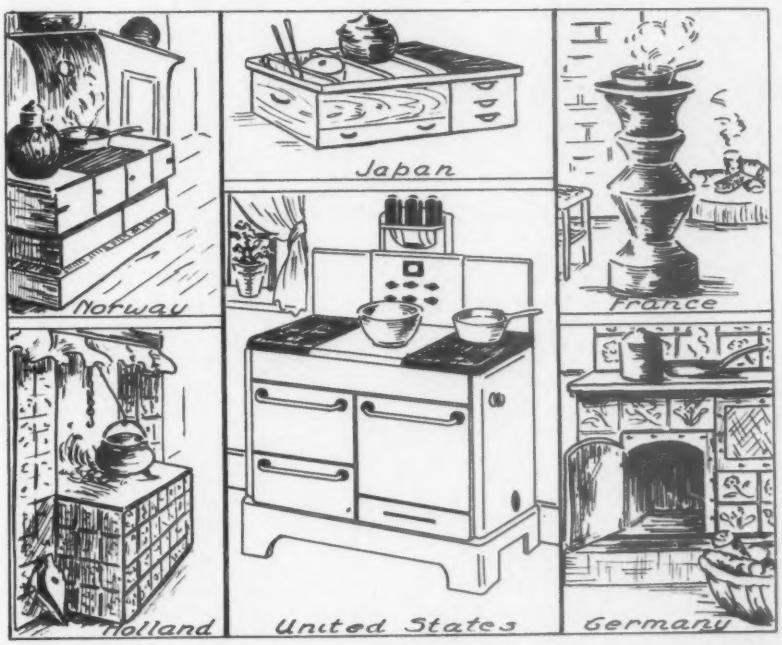
"Producer-gas, made on the truck as needed, is not as satisfactory a gasoline substitute as is compressed gas; neither is it as expensive. Despite producer-gas operated vehicles having been labeled in this country as "heavy, cumbersome, unsightly, of reduced overall reliability,"—a fair description of the gasoline engine of a generation ago—they have received widespread study and commercial use in England, Germany, Japan, Italy, and South Africa. The MacDonald cross-draft producer on a truck by High-Speed Gas, Ltd., in England, the Svedlund and Imbert down-draft producers in Germany, and the Koela up-draft producer in South Africa are examples of important commercial developments.

"Tests on a five-ton lorry at an average speed of 23 miles per hour indicated a fuel consumption of 1.69 pounds of anthracite pea coal per mile which, at $10 a ton for coal, is equivalent to 0.8 cent per mile. The lorry handled very well in traffic and was just as flexible as a gasoline-operated truck. Other experience with many thousand such vehicles in Europe and the Orient has led to claims of fuel costs as low as one-sixth that of gasoline (with gasoline roughly at twice its American cost), and half that of Diesel operation.

"Pulverized coal as a fuel for internal combustion engines has not so far overlapped the field covered by gaseous fuel or gasoline. Instead, developments have been directed towards displacement, by the coal-dust engine, of the steam boiler-turbine combination for stationary power plants. The objective of early research on the compression-ignition engine cycle was the development of a coal-dust engine, but that work led instead to the Diesel oil engine. Almost continuous research has led in the past few years to several types of powdered-coal engines which are now beyond the experimental stage."

The kitchen is the most up-to-date room in the house and there is an up-to-date gas appliance to fill its every need.—W. R. OLIVER *in Gas Times, London.*

Evolution of the Gas Range



WHILE America's modern gas range leads the world in smartness and speed, doubtless the inventive minds of many nations have contributed ideas utilized in its evolution. From the small auxiliary stove used in the Brittany province of France may have come the idea of heat concentrated beneath a utensil—as in the present multi-flame top burner. Germany conceived the wide cooking top and spacious oven because German hausfraus found it necessary to cook plenty of food.

Japan's funny little charcoal stove that sits low on the floor may have been the forerunner of our current table-top model with pull-out drawers and utensil compartment. Holland's traditional tile-faced model, half-stove and half-fireplace, probably suggested the smooth sanitary surface of alluring white enamel used today. To Norway we may be indebted for the divided top and separate grill for broiling. Each of these nations has cooked with live heat supplied by charcoal, wood, or coal.

Affiliated Association Activities

Pennsylvania Gas Association Holds Mid-Winter Sales Meeting

THE annual mid winter sales conference of the Pennsylvania Gas Association held at the Benjamin Franklin Hotel on February 10 under the auspices of the New Business Committee attracted three hundred representatives of the gas utilities, dealers and manufacturer representatives. A. M. Wiley, Pennsylvania Gas and Electric Company, York, Pa., presided as chairman of the state committee. The program was devoted to gas appliance merchandising, sales and promotion and in addition to the speakers scheduled was participated in by a dozen other speakers from the floor.

Howard S. Christman, State President, welcomed the delegates in a brief address and stated that the national campaign of the industry was to make the United States gas conscious. He said he was most optimistic in his outlook for 1938 and that the sales representatives were ready and eager to do their share in making the year one of the best in the history of the industry.

Gas Housing Program

J. F. Quinlan, director, Home Appliance Planning Bureau, A. G. A., in his talk on "Winning the Home Market" told of the national New Home plan and indicated how this program could be promoted best and most successfully locally. Orr E. Crites, eastern sales manager, Hurley Machine Company, Newark, N. J., discussed "Psychology of Selling" in an interesting and informative paper.

One of the features of the session was a symposium on "Water Heating," participated in by Felix P. Gross, John Wood Manufacturing Company, Conshohocken, Pa., on "Oil Water Heater Competition"; A. G. Blake, Ruud Mfg. Co., Pittsburgh, on "Conversion Type Water Heaters"; R. C. Bryce, Philadelphia Electric Company, on "Automatic Water Heater Rentals vs. Sales" and H. D. Lehman, The Philadelphia Gas Works Company, on "Value of Regular A. W. H. Inspection."

Harry Boyd Brown, national merchandise manager, Philco Radio & Television Corp., who was the speaker at the luncheon, was introduced by George E. Whitwell, vice-president in charge of sales, Philadelphia Electric Company. Mr. Brown, who has a national reputation as a dynamic speaker, had for his subject "Merchandising Appliances in Today's Markets" and said in part:

"The business which is going ahead fastest today and will continue to go ahead most rapidly in the future—is the business with a sales and distribution structure, organized for fast, flexible, aggressive, concentrated selling—not the sluggish, uninspired routine of order taking, but keyed to a highly specialized, intensive, continuous selling power."

A special sales meeting of sales managers and supervisors was held on February 11 with Frank H. Trembly, Jr., The Philadelphia Gas Works Company, and vice-chairman, New Business Committee, presiding. The speakers were J. L. Johnson, sales manager, Providence Gas Company, Providence, R. I., on "Putting the Gas Industry on Top with the Super Gas Range," outlining the national promotion plan and the proposed local tie in; A. E. Lee, Servel, Inc., on "Special Salesmanship"; and J. Hall Truman, Jr., commercial manager, Penn-Western Service Corporation, New York City, on "Compensation of Salesmen."

Among the manufacturers who participated in the display of new models of various domestic appliances were American Stove Company, Cribben & Sexton Co., Estate Stove Co., Glenwood Range Co., Hurley Machine Co., Roberts & Manders Stove Co., George D. Roper Corp., and Standard Gas Equipment Corp.

Oklahoma Utilities Association

AT a recent meeting of the Executive Committee of the Oklahoma Utilities Association, J. Y. Wheeler of the Community Natural Gas Company, Denison, Texas, was elected president; Glenn C. Kiley, manager western division, Oklahoma Gas and Electric Company, Oklahoma City, first vice-president; W. Jennings Young, vice-president of the Oklahoma Natural Gas Company, Tulsa, second vice-president; W. R. Emerson, vice-president and treasurer, Oklahoma Gas and Electric Company, Oklahoma City, secretary-treasurer; Kate A. Niblack, Oklahoma Utilities Association, Oklahoma City, acting secretary.

W. L. Woodward was appointed chairman of the gas division of the Association which will hold its annual convention at the Biltmore Hotel, Oklahoma City, Okla., March 21 and 22.

At a meeting of the General Committee of the Southwestern Gas Measurement Short Course held in Norman, Okla., on January 25, the dates of April 19, 20 and 21 were set for the Short Course this year which will be held at the University of Oklahoma at Norman. A copy of the program for this year's School will be available early in April.

Wisconsin Utilities Association

Frank Wilkinson

THE Gas Section of the Wisconsin Utilities Association has planned a three day convention this year, to be held at the Schroeder Hotel, Milwaukee, March 16-18. Beginning with a joint session of the Commercial and Technical Divisions, the program holds promise of informative addresses and reports as well as profitable round tables and discussions.

C. E. Kohlhepp, president of the Wisconsin Utilities Association, will open the program with an address on "Gas Industry Progress," followed by R. B. Brown, president of the Milwaukee Gas Light Company, whose topic will be the "A. G. A. Advertising Program." Other speakers at this session will include: R. J. Ozanne of Chicago, E. C. Hemes, chairman of the Customers Service Committee, E. R. Guyer of Chicago, H. J. Dropp, C. A. Debell and J. R. Lavelle of Conshohocken, Pa.

New Refrigerator Topic

The Commercial Sessions will start Thursday with an address by H. Turkelson of Racine, following which will be presentations by A. E. Lee of the Electrolux Sales Division, Evansville, on "Servel's 1938 Program" and Dr. J. D. Jordan of General Household Utilities Co., Chicago, on the "New Grunow Thermene Refrigerator."

After Alice R. Ferguson's talk on the "Effective Use of Home Service" the afternoon session will be given over to round tables followed by inspection of the Home Show Exhibits. Friday's Commercial Session will deal with gas range selling and kitchen planning and will see a "Kitchen Planning Film." The speakers will include A. G. Blitz of Sheboygan and Russell L. Cox of Chicago and again the afternoon will be devoted to round tables.

John Dopp of Fond du Lac will open the Technical Division's Thursday session with "Experience in Operation of a Reverse Flow Water Gas Machine." Other papers to be presented at this session are: "Gas Engine Applications in Gas Works and in

Industry" by Mr. White of Waukesha; "Reports of Distribution and Service Experience Resulting from Gas Conditioning," by the Gas Distribution Committee and "Report on Appliance Adjusters' School," by N. P. Mueller, chairman.

At the afternoon round table conferences, for Thursday and Friday, the various technical groups will discuss such vital subjects as "Prevention of Gum Formation and Other Condensing Problems within the Plant," "New Instruments for Leak Detection and New Tools for Repair of Leaks in Gas Distribution," "Gas Purification" and "Types of Gas Service Installation To Meet New Residence Construction Requirements."

The Technical Session for Friday morning will be devoted to papers by Frank Wilkinson of La Crosse, Allen D. MacLean of Pittsburgh, A. Knudsen of Milwaukee and O. W. Barenscher of Sheboygan, covering such subjects as "Holder Heating," "Pressure Regulation," "Service and Sales Department Relations" and "Losses in Hot Water Supply Lines."

Nominations to office for the coming year are: Technical Division Chairman, Frank Wilkinson; Vice-Chairman, G. A. Anderson; Commercial Division Chairman, Charles B. Grau; Vice-Chairman, A. A. Zertler.

The annual dinner and dance will be held Wednesday evening.

New Jersey Gas Association

THE New Jersey Gas Association will hold its annual meeting at the Berkeley Carteret Hotel, Asbury Park, N. J., April 12.

Following the various committee reports and business portion of the morning session, the tentative program features an address by Walter C. Beckjord, vice-president, American Gas Association, and remarks by Major Forward, managing director, American Gas Association. John E. Baumgarten, campaign manager, Public Service Electric & Gas Company, will preside over a symposium on "Employee Cooperative Efforts," and there will be three ten-minute talks by employees, one each to be selected from Jersey Central Power & Light Company, Elizabethtown Consolidated Gas Company, and Public Service Electric & Gas Co. At the morning session there will also be presentation of a McCarter Medal.

The Home Service Committee will sponsor a special luncheon presided over by the chairman of that committee, Mrs. Eliza M. Stephenson. Included will be an address by someone prominent in home service work.

At the afternoon session "Hot Water" will be the subject of an address by Roscoe C. Edlund of the Cleanliness Institute, and H. M. Brundage, Jr., sales manager, Washington Gas Light Co., Washington, D. C., is expected to present a talk on "Dealer Cooperation." The latest plans and progress of the A. G. A. Home Appliance Planning Bureau will then be discussed by J. F. Quinlan, director of the Bureau. In addition a ten-minute talk is scheduled on the "1938 Prize Parade."

The Technical Committee will hold a separate session in the afternoon. The following program has been arranged: Address by John Alden, Jersey Central Power and Light Co.; report of subcommittee chairmen; Gas Appliance Servicing, Frank Darlington, Peoples Gas Co., Glassboro, N. J.; "Story of Gas"—a film produced by the American Gas Association; and "Safety First," an address by a representative of Koppers Seaboard By-Product Coke Co., Kearny, N. J. John J. Crilly, Elizabethtown Consolidated Gas Company, Elizabeth, N. J., chairman of the Technical Committee, will preside at this session.

The evening will be given over to a banquet and entertainment. L. W. Becker, Elizabethtown Consolidated Company, Elizabeth, N. J., is chairman and Evan Strauss, Jersey Central Power & Light Company, is vice-chairman of the Entertainment Committee.

Oklahoma Gas Measurement Short Course Planned

Southwestern Gas Measurement Short Course executive committee in session. Left to right, front row: W. H. Carson, L. G. Rheinberger, Kate A. Niblack, A. M. Crowell, R. D. Hanley, J. H. Satterwhite, Gilbert Estill (at desk). Back row: E. H. Poe, R. D. Turner, W. F. Lowe, R. L. Rountree, G. W. McCullough, C. A. Gibson, W. R. McLaughlin, G. B. Lane, E. Kightlinger, Norris Plank, R. M. Schofield

THE Executive Committee of the Southwestern Gas Measurement Short Course met in Norman, Oklahoma, on January 24, to make definite plans for the 1938 School.

Gilbert Estill, Oklahoma Natural Gas Company, Tulsa, Oklahoma, who is general chairman of this committee, presided during the morning session, and L. G. Rheinberger, Sinclair-Prairie Oil Company, Tulsa, Oklahoma, chairman of the Program Committee, presided in the afternoon.

The dates for this year's course were set for April 19, 20 and 21.

The committee approved the recommendation that a Bulletin of the Proceedings of the 1938 School be published, and a copy of this Bulletin be mailed to each person who registers for the School.

G. W. McCullough, Phillips Petroleum Company, Bartlesville, Oklahoma, was appointed chairman of the Publication Committee. J. H. Page, gas department, Kansas Corporation Commission, was unanimously elected a member of the Executive Committee.

Other members of the Executive Committee are: W. H. Carson, University of Oklahoma, Norman, Oklahoma, chairman of Banquet, Entertainment and Local Arrangements Committee; R. D. Hanley, Magnolia Petroleum Company, Dallas, Texas, chairman of Exhibits Committee; Kate A. Niblack, Oklahoma Utilities Association, Oklahoma City, chairman of Registration and Publicity Committee; and Earl Kightlinger, Arkansas Louisiana Gas Company, Shreveport, Louisiana, chairman of Practical Methods Committee.

Other Committee Members are: E. M. Myers, Corporation Commission, Oklahoma City; A. M. Crowell, Texas Railroad Commission, Austin; E. H. Poe, secretary, A. G. A. Natural Gas Department; William F. Lowe, secretary, Natural Gasoline Association of America, Tulsa; J. H. Satterwhite, American Meter Company, Tulsa; W. R. McLaughlin, Pittsburgh Equitable Meter Company, Dallas; G. B. Lane, Foxboro Company, Dallas; George P. Bunn, Phillips Petroleum Company, Bartlesville; Max Watson, Canadian River Gas Company, Amarillo; Fay C. Walters, Panhandle Eastern Pipe Line Company, Kansas City;

R. L. Rountree, United Gas Public Service Company, Houston; C. A. Gibson, Cities Service Gas Company, Bartlesville; Norris Plank, Shell Petroleum Company, Tulsa; and R. M. Schofield, Lone Star Gas Company, Dallas.

The next meeting will be held at the Biltmore Hotel in Oklahoma City during the annual convention of the Oklahoma Utilities Association on March 21, 1938, when Mr. Rheinberger will present the program for approval. Other routine business will also be definitely planned at that time.

Bureau of Mines Lectures and Fellowships

UNDER the auspices of the University of Maryland, the Bureau of Mines, United States Department of the Interior, which maintains its Eastern Experiment Station on the campus at College Park, will offer a series of public lectures in the auditorium of the College of Engineering. Three fellowships for research in the field of engineering and applied science will also be offered.

The first lecture will be given on March 1, 1938, and thereafter the lectures will be given throughout the university year on the fourth Tuesday evening of each month beginning at 8:15.

The first speaker will be John W. Finch, director of the Bureau of Mines, who will speak on "Minerals and Industry." During the Spring Semester, in addition to the presentation of Dr. Finch, the following lectures are scheduled: March 22, "Fuels of Today and Tomorrow"—A. C. Fieldner; April 26, "Boiler Water, the Treatment of Feedwater for a Modern High-Pressure Boiler"—W. C. Schroeder; and May 24, "Mineral Physics"—R. S. Dean.

Public Invited

Other outstanding members of the Bureau's staff will be selected to speak. The broad field of science, technology, and economics will be covered. In connection with these lectures there will be no admission charge, and the general public is cordially invited.

The fellowships will be known as Bureau of Mines Research Fellowships. The recipients will undertake the solution of definite problems confronting the mineral industries. The research work will be performed at the Eastern Experiment Station of the Bureau of Mines, recently completed at the University of Maryland. Fellows register as students in the graduate school of the University, and become candidates for the degree of Doctor of Philosophy. Class work will be directed by the heads of the departments of instruction, but about half of the time will be spent in research work, under the direction of the Bureau of Mines staff.

To encourage cooperation with the industries of Maryland and to develop research and instruction in chemical engineering, the University of Maryland will also offer two fellowships in chemical engineering.

All of these fellowships are open to post-graduates of universities and technical colleges who have the proper training in engineering or applied physical science, and who are qualified to undertake research work.

Further information may be secured by addressing the Fellowship Committee, Eastern Experiment Station, Bureau of Mines, United States Department of the Interior, College Park, Maryland.

Canadian Gas Association

THE program committee headed by J. D. von Maur of the Consumers Gas Company is making real progress on the plans for the annual convention of the Canadian Gas Association to be held in the Royal York Hotel in Toronto, June 9 and 10. The secretary, George W. Allen, reports a number of papers on subjects both timely and practical by authorities have been already arranged. The details of the program will be announced in the A. G. A. MONTHLY.

Convention Calendar

MARCH

7-8 A. G. A. National Conference on Industrial Gas Sales
William Penn Hotel, Pittsburgh, Pa.

16-18 Wisconsin Utilities Association—Gas Section, Technical and Commercial Divisions
Schroeder Hotel, Milwaukee, Wisc.

16-18 American Association of Petroleum Geologists
Roosevelt Hotel, New Orleans, La.

21-22 Oklahoma Utilities Association
Biltmore Hotel, Oklahoma City, Okla.

21-25 American Society for Metals Western Metal Exposition★
Los Angeles, Calif.

APRIL

4-6 A. G. A. Distribution Conference
Netherland Plaza, Cincinnati, Ohio

11-13 Mid-West Gas Association
Hotel Lowry, St. Paul, Minn.

12 New Jersey Gas Association
Asbury Park, N. J.

18-21 American Chemical Society—Division of Gas & Fuel Chemistry
Dallas, Texas

19-21 Southwestern Gas Measurement Short Course
University of Oklahoma, Norman, Okla.

20-22 Missouri Association of Public Utilities
Jefferson Hotel, St. Louis, Mo.

MAY

2-5 U. S. Chamber of Commerce
Washington, D. C.

3-5 Pennsylvania Gas Association
Sky Top Lodge, Sky Top, Pa.

9-12 A. G. A. Natural Gas Department
Roosevelt Hotel, New Orleans, La.

9-13 National Fire Protection Association
Atlantic City, N. J.

13-15 National Petroleum Association
Cleveland, Ohio

14-21 International Petroleum Exposition
Tulsa, Okla.

16-17 Indiana Gas Association
Hotel Gary, Gary, Ind.

23-24 A. G. A. Commercial and Hotel & Restaurant Sales Conference
Belmont Plaza Hotel, New York, N. Y.

23-25 American Petroleum Institute, Mid-Year Meeting
Wichita, Kansas

24-26 A. G. A. Production & Chemical Conference
Hotel Pennsylvania, New York, N. Y.

25-27 Association of Gas Appliance & Equipment Manufacturers
The Greenbrier, White Sulphur Springs, W. Va.

May 31-June 3 The Institution of Gas Engineers, 75th Annual General Meeting
London, England

JUNE

2-3 A. G. A. Executive Conference
Palmer House, Chicago, Ill.

7-9 Edison Electric Institute
Atlantic City, N. J.

9-10 Canadian Gas Association
Royal York Hotel, Toronto, Ontario

23-24 New England Gas Association, Sales Conference
Viking Hotel, Newport, R. I.

June 28-July 1 American Home Economics Association
William Penn Hotel, Pittsburgh, Pa.

SEPTEMBER

14-16 Pacific Coast Gas Association
Santa Barbara, Calif.

Wk. 18 American Transit Association.
Auditorium, Atlantic City, N. J.

OCTOBER

Wk. 10 American Gas Association
Atlantic City, N. J.

10-14 National Safety Council
Stevens Hotel, Chicago, Ill.
National Metal Congress and Exposition★
Detroit, Mich.

★ Includes exhibit sponsored by A. G. A. Industrial Gas Section.

Accounting Section

D. H. Mitchell, Chairman H. W. Hartman, Secretary H. A. Ehrmann, Vice-Chairman

Posting Arrears and Other Items to Customers' Bills by Use of Retired Billing Machines

By GEORGE W. FUCHS

Philadelphia Electric Company

IN those companies having centralized billing and decentralized stub-accounting, the posting of arrears and other miscellaneous charges to customers' bills presents a serious problem.

Philadelphia Electric Company has at the same time solved the problem and made use of old billing machines that would otherwise be discarded. New equipment for the central billing department of the Philadelphia Electric Company was purchased recently. This afforded the opportunity to experiment with the old 261700 Burroughs public utilities billing machines in the posting of arrears and merchandise to bills.

Arrangements were made with the manufacturer to overhaul the old machines at small cost. The trade-in value of the machines together with the rebuilding cost represents a small investment, which justifies itself in providing speedily a neat and correct bill.

Six-Register Machines

The old machines contained six registers which were adapted to handle arrears, merchandise, rentals, service charges and coke along with the necessary stub-totals and totals. Separate totals for each type of item can thus be accumulated as they are posted to the bills containing the current month's billing. A proof sheet with convenient symbols is provided for checking the postings and proving with the various item controls.

In actual operation, the current billing is first entered on the right hand section of the keyboard. The bill is then inserted and the carriage is closed. The operation of the motor bar includes the amount of the current bill in the "pick up" or total register, while the carriage tabulates to the amount column on the customer's bill. With the printing control lever in the normal position, the arrears item is placed in the machine. The arrears register key is depressed, and the return and normal motor bars are operated simultaneously, providing the proper positions on the bill, cashier's coupon, and ledger coupon. The carriage automatically returns to the amount position on the customer's bill, and the total key is depressed, providing there are no other items to be included. The latter depression prints the totals on all three sections of the bill, and the carriage opens automatically.

When both merchandise and arrears are to be posted, the procedure is similar with the exception that the return bar is not depressed at the time of the arrears posting. The carriage stops in the ledger coupon position after the posting of the arrears item, and the sub-total is depressed simultaneously with the return bar. The total of the current bill and the arrears is printed on the ledger coupon, while the carriage returns to the amount position on the customer's bill.

For posting merchandise amounts, the printing control lever is placed in "shift" position, the amount is placed on both the right and left sections of the keyboard, and the merchandise key is depressed. The return and normal motor bars are depressed simultaneously, and the printing control causes the amount to print in the usual position on the customer's bill and cashier's coupon. However, on the ledger coupon, the amount prints to the left as a memorandum only and not directly under the other amounts. After the carriage has returned to the total position on the bill, the total key is depressed causing totals to print on the customer's bill and cashier's coupon but not on the ledger coupon. The sub-total referred to above after the arrears item is the total required in the accounting operation.

Credit Handling

Credits may be handled by the use of a subtract lever held in the minus position while the motor bar is depressed. The credit will be distinctly marked with a convenient symbol and will subtract from the amount due. If the credit exceeds the amount of the current bill, the net credit will be printed in red.

Postings are proved after each route book has been billed by clearing the registers to the proof sheet. The total of each classification is checked with predetermined totals or controls. During the posting operation, all the bills, on which arrears or other miscellaneous items are shown, have been placed so that they extend beyond those bills on which no postings have been made. Adding machine listings are made of the current bills on which items have been posted, and the posted total thus obtained must agree with the amount recorded in the "pick up" register.

A total of 20 machines were overhauled for this purpose and distributed to 12 district offices. Three or four of the machines may be considered as extras and are placed so that they may be used as relief in case of breakdown.

The use of the equipment for this purpose has provided a real outlet for machines which had considerable unused life but which could not be profitably continued in the present billing operation and has provided a means of furnishing customers with a much neater bill.

Contributed by 1937 Accounting Machines Committee, G. F. Trexler, Chairman.

New York Fair Prospectus

A PROSPECTUS outlining the plans, exhibiting space, costs and facilities for exhibitors in the gas industries building, New York World's Fair 1939, has been published in pamphlet form for the guidance of manufacturers of gas appliances and accessory equipment by Gas Exhibits, Inc.

The prospectus includes a renting plan, showing in detail the exhibition spaces that will be provided in the building now under construction in the exhibit area of the Fair site. Another map shows the plan of the entire exhibit area, with the location of the Gas Industries Building clearly marked in relation to entrances, other exhibitor's buildings, government buildings and buildings to be erected by the Fair Corporation.

Gas Refrigeration Popular in London

IN his report at the annual meeting of shareholders of The Gas Light and Coke Company of London, the largest gas company in the world, the Governor, Sir David Milne-Watson, stated that during the three years in which the company has actively promoted the sale of gas refrigerators it had sold substantially more than half the mechanical refrigerators sold in its territory.

Commercial Section

Hugh Cuthrell, Chairman J. W. West, Jr., Secretary F. X. Mettenet, Vice-Chairman

Valuable Prizes Offered in Annual Gas Refrigerator Sales Contest

SEVENTEEN gas companies standing highest in refrigerator sales at the end of this year's gas refrigeration selling contest will each receive a Grandfather clock—the trophy chosen as the symbol for the 1938 compaign by the American Gas Association Refrigeration Committee which will conduct the campaign to last throughout April, May and June.

This is the sixth consecutive year in which the Refrigeration Committee has conducted a similar drive for the sale of gas refrigerators during the Spring and Summer season. The 1938 campaign, planned on a scale larger than that of other years, will have as its watchword: "Make Every Minute Count." The chairman of this year's Committee is H. R. Sterrett, president of the New Haven Gas Light Company.

Awards other than the Grandfather clocks to be offered to winning companies include hall clocks, mantel and desk clocks, with valuable pocket watches to be won by sales employees who make the highest records. In addition to these various trophies—all symbolizing the theme of "making every minute count,"—more than 2,000 cash awards will go to both companies and sales people who come out ahead in the contest.

Warm-up Campaign Mar. 1

Anticipating the big campaign in which Grandfather clocks are to be the outstanding trophies, a "warm-up" campaign known as the "Stem-Winder drive" was started on March 1, for this month only, in which awards go only to salesmen. The April, May and June contest, known also as the "Main-Spring drive" will be followed by a final campaign during July to be called the "Golden Chimes drive," in which awards will only go to the salesmen participating.

As in the contests of the last three years, the Refrigeration Committee has developed the plans for the present campaign with a view to amply rewarding the individual sales people on whose efforts so much of the success of the contest depends. For this reason, emphasis has been placed on the important part sales people, in collaboration with the sales management of their companies, will take in the campaign, and the large number of valuable cash awards that will go to the men or women who make the highest records in gas refrigerator sales.

The contest will be sponsored by Servel, Inc., the manufacturer of Servel Electrolux refrigerators at Evansville, Ind., through the Association of Gas Appliance and Equipment Manufacturers.

Describing the Grandfather clocks, the committee's invitation to gas companies to join the campaign states:

"What clocks to win—each one a beautiful, accurate time-keeper made by the oldest and largest floor-clock manufacturer in the country! A cabinet-case of rare Honduras mahogany, full 80 inches high! A dial of heavy brass with raised, delicately hand-pierced and hand engraved corners and center ornaments, all richly gold plated. A hand-silvered numerical circle. Raised, bronze-finish numerals.

"To complete perfection, the notes of the famous Westminster Chimes strike softly on the quarter hour and a moving moon travels through its orbit of 29 and a half days."

Referring to the lesser awards, the invitation states: "Equally appropriate, equally beautiful are the other company awards of hall clocks, mantel clocks and desk clocks with engraved silver plates—clocks that every company will be proud to win—proud to display.

"For leading retail salesmen, there are magnificent pocket watches—watches so valuable that each salesman will recognize a 'once-in-a-lifetime' opportunity to own a really distinguished watch and will be inspired to 'sell' his hardest to win. And time well spent for gas refrigeration is made worthwhile for every man in your company."

Companies Grouped

As in previous years, the companies entering the contest are divided into groups, such groupings being based on the size of the companies expressed in terms of the number of meters on their lines and the rate per therm.

Division 1 consists of eight large metropolitan companies as follows: Boston Consolidated Gas Co., Brooklyn Borough Gas Co., Brooklyn Union Gas Co., Consolidated Edison Company of New York, Kings Appliance Corp., Peoples Gas Light & Coke Co., Philadelphia Gas Works Co., and the Washington Gas Light Co.

Awards offered to companies in Division 1 will consist of two Grandfather clocks for first place winners and cash, two hall clocks for second place winners, with three watches and 360 cash awards for the salesmen in the division.

Under the rules, no company in any division *can win more than one clock.*

Division 2 comprises companies having a rate over 12 cents per therm with 30,001 or more meters. Company awards will be three Grandfather clocks and cash for first place winners, with five watches and 321 cash awards for salesmen.

Division 3 comprises companies with 3,001 to 30,000 meters. Company awards will be three Grandfather clocks and cash for first place winners, with three watches and 224 cash awards for salesmen. (The rate per therm in Division 3 is the same as in Division 2.)

Division 4 comprises companies with 70,001 or more meters, having a rate *under* 12 cents per therm, company awards to be two Grandfather clocks and cash for first place winners, two hall clocks for second place winners, with three watches and 279 cash awards for salesmen.

Division 5 comprises companies with 9,001 to 70,000 meters, company awards to be three Grandfather clocks and cash, with three watches and 164 cash awards for salesmen. (Rate per therm is same as in Division 4.)

Division 6 comprises companies with 3,001 to 9,000 meters, company awards to be three Grandfather clocks and cash for first place winners, with five watches and 195 cash awards for salesmen. (Rate per therm is same as in Divisions 4 and 5.)

Division 7 comprises all companies having 3,000 meters or less, regardless of the rate per therm, company awards to consist of one Grandfather clock for the first place winner, one hall clock for second place, one mantel clock for third place, plus cash awards, with a watch and 135 cash awards for salesmen.

Division 8 consists of combination companies that may register in this group in addition to registering in their regular divisions (2 to 7). However, a company which wins a first or second position in any other division is ineligible for a first or second award in Division 8, the rules of the contest providing that the next highest winner steps into first or second place, as the case may be. The trophies offered in Division 8 being hall clocks for first place winner and desk clocks for second place.

Bottled Gas Division Added

A special Division (No. 9) has been added in this year's contest in which the salesmen of dealer organizations of bottled

gas members of the American Gas Association will compete for cash awards.

Cash awards will also go to the Home Service Departments of companies winning first place in their respective divisions, only companies having regularly employed home service directors or departments being eligible.

Campaigns in other years were: the "Ice-Cube" contest in 1933; the "Go-Getter" or "Blue Vase" contest in 1934; the "Prosperity Cup" campaign in 1935; the Leadership Campaign or "Sword of Merit" contest in 1936, and the Tenth Anniversary Campaign or "Big Birthday Party" contest in 1937.

Members of the 1938 Refrigeration Committee other than Mr. Sterrett are: R. O. Berry, Jacksonville Gas Co.; B. O. Brown, Servel, Inc.; N. O. Fratt, Seattle Gas Co.; A. C. Frey, Worcester Gas Light Co.; G. T. Henry, Roanoke Gas Light Co.; H. M. Henry, Utility Management Corp.; W. A. Hudson, Houston Gas & Fuel Division of United Gas Corp.; W. L. Hutcheson, Manufacturers Light & Heat Co.; A. Jansen, Jr., sales promotion counsellor; R. A. Lawder, Consolidated Edison Company of New York; E. G. Peabody, Citizens Gas & Coke Utility, Indianapolis, Ind.; J. A. Sackett, Kings County Lighting Co.; F. C. Neuls (representing Industrial Gas Section, A. G. A.); and F. E. Sellman, Association of Gas Appliance and Equipment Manufacturers.

Servicemen Receive Appliance Pointers

THE second session of the servicemens' school sponsored jointly by the Derby Gas and Electric Company and various appliance and equipment manufacturers was attended by 86 men. The session was held on February 16 in the auditorium of the Derby Gas and Electric Company, Derby, Connecticut. The day was devoted to the discussion of ranges, radiant fires and unit heaters.

Charles E. Merriam of The Glenwood Range Company, Taunton, Mass. was the first speaker and described the construction, operation and adjustment of the Glenwood Ranges. This included demonstrations of low settings possible with the "Dual Thrift" top burner and the new kitchen heating unit which is an important part of this line. Numerous questions were asked concerning the operation of the range and its safety features and also desirability of gas pressure regulators on ranges.

After lunch Norman Griffith of the Estate Stove Company reiterated Mr. Merriam's remarks about the necessity for proper adjustments of top and oven burners and pointed out some of the features of the indirect type of oven. He was followed by Mr. Sullivan, eastern service manager of the Estate Stove Company who demonstrated the methods of making all necessary adjustments on the range and also the way in which ranges should be levelled in order to obtain the proper baking results.

At the conclusion of Mr. Sullivan's discussion William Hanson, service manager of the Providence Gas Company, summarized the previous talks and the various questions which had been asked by members of the school. Mr. Hanson particularly emphasized the need for proper burner input and the necessity for accurate and careful pressure regulation. He discussed at great length the problems peculiar to gas ranges and gave suggestions based on his experience in various capacities in the service departments to insure better and most complete satisfaction to the user.

Following Mr. Hanson's summary of the previous discussion on ranges Julius Meier, General Gas Light Company, New York City, discussed the installation and servicing problems of radiant fires and Humphrey unit heaters. The knowledge which he had gained from his work in the design, testing and application of unit heaters was very effective with the men of the school and as usual they participated by questions covering their own field experience.

The meeting adjourned at 6:30 P.M.

R. M. Conner, director of the A. G. A. Testing Laboratories, was the speaker on Thursday evening, February 24. His topic was the A. G. A. Testing Laboratories program.

Air Conditioning Meeting

THE Central Indiana Gas Company and the Knapp Supply Company of Muncie recently co-sponsored an air-conditioning meeting at Muncie, one of the first of its kind ever held in that territory.

James C. Patterson, connected with the Carrier Corporation of Syracuse, N. Y., addressed the group. Mr. Patterson has to his credit the pioneering of many large and difficult installations and vividly demonstrates the superiority of gas for the purpose.

The session was attended by 110 industrial engineers, factory managers, doctors, hotel, restaurant, theatre operators and others interested in freedom from climatic conditions.

The Knapp Supply Company deals in plumbing, mill and industrial supplies, and cooperates with the Central Indiana Gas Company, whose operations coincide to a considerable extent with the sales territory of the supply company.

Manufacturers to Meet in May

MANUFACTURERS of gas appliances, equipment, and accessories, from all parts of the United States and Canada will meet in White Sulphur Springs, West Virginia, May 25-27, at the annual convention of the Association of Gas Appliance and Equipment Manufacturers, it has been announced by Merrill N. Davis, president of the Association, and executive vice-president of the S. R. Dresser Manufacturing Company, of Bradford, Pa.

The three-day convention will be held at The Greenbrier where the delegates of major industrial manufacturing companies will discuss technical, promotional, and other matters of national importance in the gas appliance industry.

Manufacturers To Launch Gas House Heating Campaign

A NATIONWIDE campaign promoting the sales of gas-operated home-heating equipment is about to be launched by the Association of Gas Appliance and Equipment Manufacturers. H. P. Mueller, president of the L. J. Mueller Furnace Company of Milwaukee, Wisc., is chairman of the gas house-heating and air-conditioning division of the Association, which is sponsoring the activity.

The promotional project will take the form of a contest, officially beginning on April 1 and closing on November 30, which will be open to two main groups: (1) Utilities, sales managers and their salesmen, (2) Jobbers and retail dealers, sheet metal contractors, and heating and plumbing contractors.

More than $20,000 will be offered in prizes to those in the utility group with cash awards for company sales managers, monthly awards for utility salesmen, and final grand cash awards to the salesmen who maintain consistent, outstanding activity throughout the eight-months program.

A large variety of substantial merchandise awards valued at $15,000 will be presented to participants in the retail section of the contest.

In order that participants may compete on an equal basis, utility companies will be classified in divisions so that salesmen in smaller communities will have the same chance of winning as those in larger cities, and retailers will be classified geographically on a comparable scale.

The 1938 home-heating equipment sales program will be known as the *"G-Man Reward Roundup."* According to the contest committee, "the project will have dramatic action and color; announcements and promotional literature will be styled on the order of confidential bulletins from headquarters, and the entire campaign will assume the character of a G-Man drive for rich rewards."

The title of the contest, which will appear on all circulated material, is unique in that the "G" will actually stand for "Gas," with the "a" and "s" in very small type.

Industrial Gas Section

Hale A. Clark, Chairman Eugene D. Milener, Secretary Frank H. Trembly, Jr., Vice-Chairman

Gas Units Feature of Heating and Ventilating Exposition in New York

F. H. Trembly, Jr.

By J. B. NEALEY
American Gas Association

THE number of exhibitors showing new gas heating and air conditioning equipment at the Fifth International Heating & Ventilating Exposition held at the Grand Central Palace, New York, N. Y., Jan. 24-28, is a striking example of the growth of public acceptance of gas fuel as a heating and cooling medium" Frank H. Trembly, vice-chairman, Industrial Gas Section, A. G. A. and chairman of the A. G. A. House Heating & Air Conditioning Committee, declared after visiting the Exposition. "Practically every manufacturer of central heating appliances featured gas units by themselves or gas and other fuels together," he said. "It is evident that heating equipment manufacturers are prepared, in 1938, to include gas heat in their promotional program."

Unit Heaters Shown

Featured throughout the exposition were many new developments in gas air conditioning, heating, humidification and dehydration for domestic, commercial and industrial purposes. A very definite tendency toward adoption of forced warm air winter conditioning was in evidence. Gas unit heaters which have been receiving widespread acceptance at an accelerated pace for heating commercial and industrial establishments were prominently featured.

Meetings of the American Society of Refrigerating Engineers and the National Warm Air Association were held in the Roosevelt Hotel while those of the American Society of Heating & Ventilating Engineers were held in the Biltmore.

Another prominent visitor was Charles R. Bellamy, chairman of the Industrial & Commercial Air Conditioning Committee, Industrial Gas Section, who stated, "Industrial leaders are becoming increasingly aware of the superiority of the gas adsorption type of dehydration unit for summer air conditioning and process drying. Ample proof of this was reflected in the crowds that jammed the booths of the three leading manufacturers of this apparatus."

Mr. Bellamy referred to The Bryant Heater Co., Cleveland, the Carrier Corporation, Syracuse, N. Y. and the Surface Combustion Corp., Toledo, whose extensive and informative exhibits were continual centers of attraction to crowds of interested visitors.

Year 'Round Air Conditioning Trend

The trend toward year 'round air conditioning has resulted in combining the principle components of air conditioning, humidification and dehumidification into one unit. These units are built for industrial, commercial and residential adaptation. They combine the six factors of up-to-date air conditioning, namely, heating, cooling, humidification, dehumidification, forced circulation and air filtering. Provision is made for control over these factors and to provide a maximum of economy and minimum of trouble by the application of automatic devices.

The Surface Combusion Corp. goes this idea one better. This concern introduced for the first time a single unit combining all these factors and in addition this unit deodorizes the air and retards all germ growth in it. Lithium chloride is the adsorptive material which accomplishes this. This unit is applicable to homes, commercial establishments and industrial uses when controlled drying is a problem. Also shown in this booth were the Janitrol house heating unit and the ceiling type gas heater, long standard equipment with this company. Features of the booth were two puppet shows playing up the inconveniences and conveniences of before and after using controlled heating and air conditioning.

Shown for the first time was a gas winter heater and humidifier built by the Bryant Heater Company especially for small homes. It comes in three sizes to suit any climate. A standard silica-gel, gas dehumidification unit adaptable for industiral, commercial or residential use was also featured. By combining a cooler, heater and controls with this unit, all year 'round air conditioning can be obtained. In addition to this equipment was a separate humidifier with forced circulation and automatic control for use in the home.

Bryant also introduced a novel gas duct heater for warm climates. Industrial and commercial establishments using ventilating or summer air conditioning systems sometimes require heat. Since many such plants have no central heating, the gas duct heater can be installed in any duct in place of a steam coil with consequent savings in plant, fuel, labor, maintenance, etc.

Industrial Dehydration Processes

The Carrier Corporation featured a dehydration unit employing gas to reactivate the silica-gel for air conditioning and industrial dehydration processes. By combining it with other equipment manufactured by this concern 12 months air conditioning can be combined with summer cooling and winter heating, all under automatic control.

The great strides made in gas heating for both the home and for commercial and industrial establishments were in evidence everywhere. Gas boilers and warm air furnaces vied with gas unit heaters of the ceiling suspension and other types. The C. A. Dunham Co., Chicago, introduced a gas central heating plant designed to eliminate chimneys. It uses a two-inch copper vent extending just above the roof. A combustion chamber is surrounded by a water jacket which merges into a water chamber above. The hot products of combustion are intermingled with the hot water and steam and the resulting vapor is employed in a heat exchanger to heat fresh air that is distributed by ducts to the various rooms to be heated. Stack losses are cut to a minimum as demonstrated by the copper vent pipe which could be handled safely.

The American Radiator Co., New York, had a gas steam boiler, with glass windows in the steam chamber, going full blast. Its subsidiary, the American Gas Products Corp., New York, introduced its new direct gas-fired winter air conditioning unit, pan evaporator type. Also shown was its standard sectional low pressure gas boiler usable with hot water, steam or vapor heating systems. This is equipped with a new thermotor valve in the gas line which is actuated from the room thermostat. Gas water

Industrial and Commercial Gas Men at the Air Conditioning Show

Industrial and Commercial Air Conditioning Committee, Industrial Gas Section, at a meeting prior to visiting the show. Seated, left to right: L. Ourusoff, R. P. Wilson, Charles R. Bellamy, chairman, H. C. Haroldson. Standing: C. F. Cushing, Kendall B. Castle, F. M. Johnson, D. S. Reynolds and J. C. Patterson

Edward L. Wilder, The Utility Management Corp., New York, watching the puppet show in the Surface Combustion Corp. booth

C. A. Olsen, president, Fox Furnace Co., and S. E. Runser, Montana Power Co.

Left to right: H. C. Haroldson, The Commonwealth & Southern Corp., Frank H. Adams, vice-president, Surface Combustion Corp., H. Preston Morehouse and Howard Niles, Public Service Electric & Gas Co.

A. M. Apmann, Derby Gas & Electric Co.; A. E. Stock, Washington Gas Light Co.; and Otis E. Barene, New York & Richmond Gas Co.

Arthur Friedman, vice-president, The Cleveland Heater Co., A. M. Apmann, Derby Gas & Electric Co., Otis E. Barene, New York & Richmond Gas Co., and Leo Friedman, president, The Cleveland Heater Co.

Lyle Harvey, vice-president, The Bryant Heater Co., and Walter L. Frederick, president, Bryant Air Conditioning Corp.

Gebhard C. Beck, Harold S. Birkett, Joseph F. Quinn, Alva L. Palmer and W. T. Eddy, all of The Brooklyn Union Gas Co.

heaters in new and pleasing jackets were in evidence.

A cutaway model showing the standard and new features of its gas house heating boiler was the center of attraction in the booth of the National Radiator Corp., Johnstown, Pa. Another cutaway model demonstrated effectively a new heat extractor boiler especially designed for use with gas conversion burners. Multifingers cast over the crown and in the flueways give efficient operation with gas.

House Heating Package Unit

The Mueller Furnace Co., Milwaukee, showed for the first time a gas house heating package unit for the volume trade and ranging in capacity from 65,000 to 100,000 B.t.u.'s. It includes a warm air direct-fired gas unit, humidifier, fan and filter in one jacket. This concern also featured an "above the floor" warm air heating and winter air conditioning unit for apartments or houses without basements. Sectional, cast iron gas boilers and warm air furnaces completed the exhibit.

A new direct gas winter heating and air conditioning unit with controlled humidification, forced circulation, filtering, etc. featured the booth of the General Electric Co., Schenectady, N. Y. The heating portion comes in two types, one a warm air furnace and the other a boiler, both fueled with gas. A humidistat located in the living quarters operates a solenoid valve in the water supply line to the humidifier.

Automatic gas boilers of the sectional cast-iron type for heating houses and commercial and industrial establishments were featured by Crane Company, Chicago. A new model of very small size for residences was presented for the first time. All these units are furnished with de luxe housings for finished basements.

Combination gas heaters and air conditioners were on display at the booth of the Fox Furnace Co., Elyria, Ohio, a division of the American Radiator & Standard Sanitary Corp., New York. These are direct-fired with humidification for winter and put up in cabinets of steel finished in two-tone glossy green enamel.

A new gas incinerator was presented by the Condensation Engineering Corp., Chicago. This was designed for commercial, institutional or residential service. It burns the garbage to such a fine powder that the ash tray has to be emptied only 4 times a year. This concern also displayed a line of vitreous enameled chimney linings for use with gas-fired heating units.

The exposition was a success from all points of view and especially from the standpoint of the gas man. The accumulated evidence of the progress gas is making in these fields is most heartening to the industry.

Ventilating Engineers Elect Canadian

EDWARD HOLT GURNEY, engineer and industrialist of Toronto, was elected president of the American Society of Heating and Ventilating Engineers Jan. 25 at the second session of the forty-fourth annual meeting in New York City.

The first Canadian in the society's history to be its head, Mr. Gurney is president of the Gurney Foundry Company, Ltd., and subsidiary companies of Toronto, manufacturing heating and air-conditioning equipment.

Mr. Gurney is a member of the American Gas Association, the council of the Royal Canadian Institute, the Institute of International Affairs, associate director of the Canadian National Exhibition and a member and former director of the Canadian Institute of Plumbing and Heating.

Industrial and Commercial Gas Advertising Schedule for March

The Advertising Committee of the Industrial Gas Section, J. P. Leinroth, Chairman, announces that full-page advertisements will appear in the following trade and business magazines during the month of March:

Magazine	*Date*	*Topic*
American Hairdresser	March	Modern Hair Drying
American Restaurant	March	Commercial Cooking
Bakers Helper	March 5	Improved Bake Ovens
Bakers Weekly	March 12	Improved Bake Ovens
Ceramic Industry	March	Firing Ceramic Furnaces
Food Industries	March	Gas for Food Manufacturing
Heat Treating and Forging	March	Heavy Industrial Heating
Hotel Management	March	Gas Commercial Cooking
Industrial Heating	March	Miscellaneous Industrial Heating
Iron Age	March 10	Gas in the Ferrous Metals Industries
Metals and Alloys	March	Miscellaneous Industrial Heating
Metal Progress	March	Miscellaneous Industrial Heating
Steel	March 14	Gas in the Ferrous Metals Industries

GOING AHEAD

WITH INDUSTRIAL GAS

The Lincoln Plant uses as much gas any month as an entire city the size of Ann Arbor, Mich. (Sign in industrial display window, Detroit City Gas Company.)

GAS DRIES THEM ALL

Indicating a growing acceptance of gas as an ideal fuel for large volume drying operations, more than thirty such installations were made in one year by Consolidated Edison Co. of New York. They represent an estimated annual consumption of more than 13,000,000 cubic feet of gas. Among the industrial products so treated are lacquered metals, rugs and carpets, gummed and lacquered papers, silk after dyeing, furs after blending and dyeing, moving picture film, drug and chemical powders, printed fabrics after stenciling, tile after enameling, synthetic resins, Bakelite strips, filter paper and stereotype mats.

Early Roman feasts always included smoked sausage. A thousand to one they didn't taste as good as those smoked with gas today.

The National Gas Association of Australia has adopted our Industrial Gas Section's advertising slogan-chart "The Trend Today is to GAS." Thanks for the compliment, and may it bring in lots of business.

Revised A. G. A. Approval Requirements for Hotel and Restaurant Gas Ranges became effective Jan. 1, 1938.

Recent statement in a prominent electrical magazine:

"Today in practically every large utility (electric) the air conditioning division is haunted by nightmares. Through these nightmares stalks an ogre labeled 'Load Factor.' "

Take the hint, boys; no such nightmare will haunt you when selling gas air conditioning.

In a winter storm, Louis Stein and his associates in Northern States Power Company, along with Detroit-Michigan Stove Company men, took proprietors, managers, chefs and cooks from nearly every hotel, restaurant and institution in Grand Forks over to Fargo, a hundred miles away, to see how its done with gas in commercial kitchens. As Louis sez: "There's Gold in Them Thar Grills" and orders later showed he was right.

Ed Kramer's latest picture bears the label "Atlanta—No. 47658" across his breast. Nothing like boosting a leading industry of the old home town, Ed. Ye Editor, who is a friend of Ed's, blocked it off of the picture which appeared in the February issue.

British Steel Uses More Gas

ALL of the large steel firms in Sheffield, the steel producing center of the British Empire, are now using gas in increasingly large quantities. The increase of gas consumption there in the past five years has been 135%.

The experience of many years has shown "without any doubt that the most certain way to guarantee the quality of any steel article at the lowest possible cost in the long run is to use town gas fired furnaces for reheating and heat treatment."

Industrial Gas Division Becomes Two Units

CINCINNATI Gas and Electric Company has divided its industrial gas division into two units, both reporting to E. R. Rothert, manager, gas commercial department. One unit will handle all industrial gas sales and will be in charge of Stanton T. Olinger. The other will handle hotel, restaurant and general commercial sales and will be under the supervision of J. R. Delaney. Both of these men are experienced industrial gas men, having served under the late Dr. E. W. Esslinger, formerly head of the company's industrial gas division.

Prominent Industrial Gas Executive Dies

E. W. ESSLINGER, 56, supervisor of the industrial gas sales division of the Cincinnati Gas & Electric Company for the past thirteen years, died in January.

Dr. Esslinger was a national figure in the gas engineering field. He was considered an authority on atmospheric types of gas furnaces for steel treating, and wrote numerous articles and pamphlets on the application of such furnaces in that field.

He was on the Advisory Council of the American Society of Metals, Cincinnati Chapter, and an executive officer of the same organization; he was also on the Approval Requirements Committee for gas house heating equipment and for gas-fired power boilers of the American Gas Association.

A member of Phi Beta Kappa, honorary scholastic fraternity, Dr. Esslinger had received degrees of Bachelor of Science in Chemical Engineering and Pharmaceutical Graduate from Purdue University, Master of Arts from the University of Michigan, Doctor of Philosophy from the University. He had pursued special studies in bacteriology at John Hopkins University.

Previous to his connection with the Cincinnati Gas & Electric Company, Dr. Esslinger was associated with the Phillip Carey Company as a chemical engineer and with the University of Cincinnati as instructor in chemistry. Before that he was with the DuPont companies in West Virginia.

BEHIND THE SCENES . . . *with INDUSTRIAL GAS COMMITTEES*

TOM HALLORAN'S Food Industries Committee has just finished its first Interim Report. Tom is going to tell all about it at the Pittsburgh Industrial Gas Conference and hand out autographed copies. Food manufacturing covers a multitude of operations from crisping your breakfast food to smoking hams to roast for the evening meal.

More authentic data are needed on the application of gas to the various food manufacturing processes and this committee is on its way to gathering it.

THE Industrial Section's Committee on Programs has been busy whipping suitable industrial and commercial bills-of-fare into shape for two important groups of meetings, the annual convention of the Natural Gas Department in New Orleans and the annual A. G. A. Conference on Industrial Gas Sales in Pittsburgh.

With gas a source of heat for several thousand industrial and commercial applications, many of them highly competitive, Chairman Frank Rainey and Vice-Chairman John Warden realized they couldn't cover them all. So they and their associates had to choose 24 subjects for the two meetings, and we are betting you will find plenty of sales and engineering meat in both programs. A special Subcommittee composed of Messrs. Ross, Brosius and Wood assisted in the preparation of the program for the Pittsburgh Conference.

THE Publicity Committee of the Industrial Gas Section met at A. G. A. Headquarters last month, the meeting being presided over by Chairman Harry A. Sutton of Newark, N. J. Among other matters considered were the extension of industrial and commercial gas publicity into certain new fields.

Studies made of recent editorial trends and modern trade and business magazine layouts were discussed.

CHAIRMAN Charles R. Bellamy of the Industrial and Commercial Air Conditioning Committee has announced the addition of Duncan Williams of New York and George Simpson of Pittsburgh to the membership of the committee. Mr. Williams is in charge of air conditioning investigations for Carbide & Chemical Corp., New York, N. Y., and Mr. Simpson is vice-president of Pittsburgh Lectrodryer Corporation, manufacturers of industrial dehydration air conditioning apparatus.

THE Chairman and Vice-Chairman of the Industrial Gas Section's Gas Engine Power Committee, E. P. Kramer of Atlanta, Ga., and Ralph H. Wenner of Toledo, Ohio, delivered papers on two phases of gas engines at the annual convention of the Southern Gas Association in Dallas, Texas, February 16-18.

Mr. Kramer presented his views on the application of gas engines to air conditioning on which he is a recognized authority, and Mr. Wenner elaborated on the system of interconnecting on the customer's premises power from gas engines and central station electric power.

Mr. Wenner who is the originator of this ingenious system first announced it in a paper at the 1937 A. G. A. Conference on Industrial Gas Sales. Since that time further technical progress has been made and a number of interesting installations are demonstrating the system's practicability.

THE Volume Water Heating Committee of the Industrial Gas Section has just completed and published its first Interim Bulletin entitled "Water Heating in Summer from Space Heating Boilers in Commercial Establishments." Chairman Lawrence E. Biemiller of Baltimore, points out that the bulletin contains a large number of case histories of volume water heating installations most of which use gas, but others that use oil and coal.

In addition to the conventional types of engineering and operating data a feature of these case histories is the inclusion of information on the economics and sales aspects of each gas installation and the economic and competitive aspects of installations that use other fuels.

This Interim Bulletin has been distributed to all gas companies and water heater manufacturer members and to individual members of the Industrial Gas Section. Additional copies can be secured from A. G. A. Headquarters.

MEMBERS of the Managing Committee of the Industrial Gas Section are interchanging, through A. G. A. Headquarters, samples of each piece of direct mail, industrial and commercial advertising that is prepared by their respective companies. Eighteen pieces have been interchanged since the beginning of the current Association year.

Science Marches On!

"We have today returned a case containing a British Thermal Unit, as instructed. Please arrange to pass credit upon receipt."—From a letter to Ascot Gas Water Heaters, Ltd.

Technical Section

J. V. Postles, Chairman H. W. Hartman, Secretary F. M. Goodwin, Vice-Chairman

Annual Distribution Conference To Meet at Cincinnati, Ohio

H. L. Gaidry

CINCINNATI will be host to the fifteenth annual meeting of the Distribution Committee on April 4, 5, and 6. The famous Netherland Plaza Hotel, its many spacious rooms providing ample facilities for all meetings, will be headquarters for the conference.

The untiring work of the committee has resulted in an exceptionally well-rounded program which, with the geographical location of Cincinnati, will make this meeting attractive to the distribution engineer.

In addition to the regular program of prepared papers and talks by men prominent in the gas industry, the committee will again have five Luncheon Conferences on the afternoon of the first day. Charles F. Turner, vice-chairman of the Distribution Committee, is in charge of the Luncheon Conferences. With the assistance of the five chairmen, Mr. Turner has made extensive plans to insure interesting as well as instructive meetings. An accompanying article in this issue fully discusses this phase of the conference.

Comprehensive Program

In addition to the Luncheon Conferences, the program includes prepared papers covering a wide field of distribution activities and problems. All of the papers are the result of considerable study and research on the part of the authors and contain information which the distribution engineer cannot afford to miss. Of even more value to the distribution engineer is the oral discussion which follows each paper. Appreciating the value of these discussions, the committee has allotted ample time and will encourage a free exchange of ideas and problems. This valuable part of the program can only be obtained by being present and participating in all the meetings.

Among the authors appearing on the program is Dr. W. A. Pearl, of the Armour Institute of Chicago, Ill. Dr. Pearl has done considerable research in the field of welding, and is thoroughly qualified to discuss the metallurgical properties of the materials to be welded and the proper selection of welding rods. He will also point out salient factors that affect the quality of the weld. This latter will be illustrated by data and photo-micrographs of good and inferior welds made by the same process. Dr. Pearl will also discuss the responsibilities of the engineer for the selection of proper materials and specifications for welding, and will show the importance of proper training, qualifying and testing the welding operators.

Following Dr. Pearl's presentation, Herman G. Horstman, of the Public Service Company of Indiana, will present a summary of welding practices followed by gas operating companies. Ample time will then be allowed for the many questions it is expected Dr. Pearl will be required to answer.

By H. L. GAIDRY*

New Orleans Public Service Inc., New Orleans, La.

Servicing To Be Discussed

An extremely interesting and instructive paper on "Servicing Domestic Appliances" will be presented by Elmer Christell of The Peoples Gas Light & Coke Company, Chicago, Ill. Mr. Christell will discuss in detail the importance of maintaining continuous training for the appliance service men, and its effect on customer relations. He will point out the fundamental instructions which must be given the service man in order that he may render efficient service to the customer.

Mr. Christell will also compare what was considered adequate training five years ago, with the training necessary today, due to the very recent changes in the design and construction of the gas range. The training necessary for the modern range will be presented and supported by drawings of the different types of adjustments found on many of the new range burners. He will also show how proper training eliminated customer complaints after the introduction of the modern gas range.

Another most interesting talk will be made by F. M. Goodwin, vice-chairman of the Technical Committee. Mr. Goodwin, in his official capacity, has attended most of the A. G. A. Sectional and Departmental meetings during the past year, and has been in a position to study the activities of these departments. Mr. Goodwin will discuss "A. G. A. Sectional and Departmental Activities of Interest to the Distribution Engineer."

In the distribution of any kind of gas many important problems arise that could best be answered by the chemical engineer. George E. Ludwig, superintendent of service, Grand Rapids Gas Light Company, who is vice-chairman of the Chemical Committee, will point out the many advantages of mutual cooperation between the Distribution Department and the Laboratory personnel.

An interesting and instructive presentation by D. P. Allen, of the Washington Gas Light Company, on the "Economics of Metering" will also form part of the program. Mr. Allen has devoted many years of his services to this important branch of the utility business in addition to serving for the past several years as chairman of the Subcommittee on Meters and Metering. He is particularly well qualified to discuss meter records and to show how they can be employed to establish meter policies that will save considerable money in the overall cost of metering.

Commercial Refrigeration Topic

T. J. Perry, superintendent of customers service department, The Brooklyn Union Gas Company, will present a paper on "Commercial Refrigeration." The problems of Commercial Refrigeration are vastly different from the domestic type and Mr. Perry is prepared to discuss the recent information he has acquired on the installation, maintenance, and operation of the commercial units. Since commercial gas refrigeration has only "scratched the surface" the distribution engineer will get much information from this paper and its discussion, that will be of value to him in the future. Ample time is being allowed for a full discussion of this topic because the field offers unlimited possibilities for the advancement of gas refrigeration.

An interesting paper on the "Use of Gas Engines for Electrical Generation," will be presented by R. S. Wenner, industrial sales manager for the Ohio Fuel Gas Company. Mr. Wenner is vice-chairman of the Gas Engine Power Committee and has done outstanding work in connection with the application of gas engines for electrical generation.

Dr. Scott Ewing, research associate of the National Bureau of Standards, Wash-

* Chairman, Distribution Committee.

ington, D. C., will deliver a non-technical summary of the most recent developments in the field of soil corrosion. Included in Dr. Ewing's presentation will be the most recent data on the behavior of copper pipe, methods of testing corrosion of soil, cathodic protection, treatment of metal prior to coating, and coating materials.

With the idea of giving the distribution engineer attending the conference a chance to familiarize himself with other phases of the industry, it is planned to have at least two papers from members of the Natural Gas Department of the A. G. A. dealing with subject matter particularly related to the natural gas industry.

In addition to the prepared papers there will be reports of the chairman of each subcommittee. A. V. Smith will report for the Subcommittee on Pipe Coating and Corrosion, and will include the long-awaited information on the Corrosion Manual. L. W. Tuttle will report for the Subcommittee on Pipe Joints and Pipe Materials. The recently formed Subcommittee on Gas Mains Structural Strength, under the chairmanship of Erick Larson is accumulating valuable information. Mr. Larson will report for his committee. C. C. Simpson will report for the subcommittee on Cast Iron Pipe Standards.

The distribution engineer will find that the program of this conference will be interesting and instructive, regardless of whether the gas he has to deal with is manufactured, natural or mixed.

One of the outstanding advantages of attending the Distribution Conference lies in participation in the open discussions, both in the Luncheon Conferences, and the general meetings. As much time as is necessary will be allotted for the discussions of papers, and each author will be more than ready to answer any questions from the delegates after the presentation of his paper. Open discussions, at all times, will be encouraged.

The Netherland Plaza Hotel has reserved large blocks of rooms at very reasonable prices for the period of the conference. Make your plans now for being in Cincinnati, Ohio, on April 4, 5, and 6.

Distribution Committee Continues Popular Luncheon Conferences

By C. F. TURNER*
The East Ohio Gas Co., Cleveland, Ohio

THE Luncheon Conferences, which have become a definite part of the program of the annual Distribution Conference because of their widespread popularity, will be continued at the 1938 Distribution Conference to be held in Cincinnati on April 4, 5 and 6.

Following the custom of past years, there will be five group meetings on the afternoon of the first day. Each meeting will start off with luncheon at 12:30 and will continue as long as anyone has a question to discuss. Last year some of the groups did not break up until the dinner hour.

No Permanent Record

No record of the discussions will be kept other than the notes taken by the various group chairmen. These notes will not appear in any of the Conference records or minutes, but will be used in the preparation of a summary for presentation at the Open Forum on the afternoon of the last day. The Open Forum has served as a clearing house for information brought out in the group meetings. The highlights of each conference group are presented by the chairman of that group, and in this way everyone present is able to hear a digest of the discussions in those groups which he was unable to attend.

Group I will discuss "Appliance Installation and Servicing." This will be along the same lines as the meeting held last year on "Customer Service," but will include the installation of appliances as well as their servicing. Such questions as approval of appliances and acceptance of A. G. A. Laboratory approval, installation codes, appliance venting, selection and sizing of equipment, and many other details of a similar nature should offer plenty of opportunity for an instructive program.

Group II will discuss "Year-'Round Air Conditioning" in all its phases, and relations to the Distribution Department. This is the first time that this growing load builder has appeared on the program of a Distribution Conference. There are many questions to be answered, much technical information to be clarified, policies to be formulated on such things as filter replacement, motor replacement, system balancing, duct design, the pros and cons of humidification, proper control of furnace temperatures and air velocities, etc. There are many questions concerning the use of gas engine power to replace electric motors on refrigerator loads, the design and use of gas-fired portable summer conditioners. Group II should be well attended, especially since this is a new feature of the program.

Metering will be discussed this year, but the scope has been broadened to include problems in connection with large volume measurement and proving of meters in place. Therefore, the term "meter" has been changed to "gas measurement."

In answer to requests for discussion of regulation problems, provision has been made to include such things as district regulator station design, long distance pressure recording, pressure relief valves, etc. Because of the great variety of suggested topics, it was found advisable to include questions relating to regulation with those on gas measurement. Group III will, therefore, be headed "Gas Measurement and Pressure Regulation."

Employee Training Highlights

Employee training continues to receive a great share of the distribution man's attention. No program would be considered complete which did not provide a hearing on such topics as selection of employee and instructor job training, versus school room instruction, full time instructors' classes on employee or company time, and many other equally important problems. The constant increase in the application of automatic controls to gas appliances—industrial, as well as domestic and commercial—makes it more and more evident each year that the service man must be kept abreast of the latest developments, and his basic knowledge of gas combustion, electrical circuits, and mechanics, broadened.

Included with the matter of employee training is a subject which has come in for considerable attention during the past year or so; that is, classification of employees. This has been included in the same group with employee training, therefore Group IV will be headed: "Employee Training and Classification." There is little question but that this group will be popular with a great many distribution men and good discussion is anticipated.

Group V—"Utility-Dealer Relationships"—has been added to the program this year in recognition of the growing responsibility which gas men feel toward dealers in gas equipment merchandise. These people are faced with many of the same problems that the utilities now face, particularly in the matter of training of their employees in the proper installation and adjustment of appliances. Many utilities are contracting their own work to dealer organizations, and are financing much of the equipment sold by these dealers. For these reasons there is a very close relationship between utility and the dealer, and many companies are going to great lengths in offering facilities for the education of dealer employees in the installation of equipment. Perhaps this will be of most interest to those utilities who pursue a policy of dealer cooperation, rather than one of direct selling. However, there should be much brought out in the discussions which will be of interest to all utilities.

It will greatly facilitate the handling of details and will add much to the success of the Conference if everyone expecting to attend will apply for his luncheon tickets at an early date.

* Vice-Chairman, Distribution Committee.

Testing Laboratories

R. M. Conner, Director — Managing Committee: J. S. DeHart, Jr., Chairman — N. T. Sellman, Secretary

House Heating Boiler and Furnace Requirements Permit Different Control Sizes

By FRANKLIN R. WRIGHT
A. G. A. Testing Laboratories

IT has been the policy, ever since the appliance testing program was originally instituted, to require the same size controls on appliances for use with either manufactured, mixed or natural gases. It has always been necessary, however, for manufacturers to supply appropriate orifices for gases of different specific gravities and heating values. Proper size orifices or adjustments in the orifice sizes are made by the manufacturer before appliances leave his factory, or orifices of the proper size are attached to the appliance when shipped to any particular city to be attached when the appliance is installed.

In some cases appliances are designed with different burners for use with manufactured gas than those for use with natural and mixed gases. In such cases, the manufacturer supplies the appropriate burner equipment depending upon the type of gas used in the locality where the appliance is shipped and is to be installed. As mentioned previously, however, controls sufficiently large for use with manufactured gas have always been required under our approval requirements regardless of whether the appliances were used in manufactured, mixed or natural gas territories.

This has meant larger controls than were necessary on appliances installed and used on high heating value mixed gases or with natural gas. As a matter of fact, indications are that more perfect control can be secured with certain type of accessories if smaller sizes are used for natural and mixed gases than those which would be required for manufactured gas. In other words, controls sized for higher heating value gases will give more satisfactory operation with these gases than those sized on the basis of a 500 B.t.u., 0.6 specific gravity gas. The subcommittee, therefore, revised the requirements for pressure drop and for regulator performance, specifying the conduct of tests on a 500 B.t.u. per cubic foot 0.6 specific gravity gas for controls for use with gases under 800 B.t.u. per cubic foot and tests on an 800 B.t.u., 0.7 specific gravity gas for controls for use with gases having heating values of 800 B.t.u. per cubic foot or more.

Subcommittee on Approval Requirements for Central Heating Gas Appliances at meeting in Cleveland, February 2. Left to right: Thomson King, E. A. Jones, J. R. Denise, J. N. Crawford, W. M. Jacobs, B. A. Johnson, J. W. Farren, William Hoyt, E. B. Thompson, F. E. Hanson, and Charles F. Turner

In view of the fact that next season's line of house heating appliances are now being designed and in order to permit manufacturers to benefit by this change in the requirements, the subcommittee adopted the revisions mentioned to become effective immediately upon approval by the A. S. A. Sectional Committee, Project Z21, A. G. A. Approval Requirements Committee. This matter is now under consideration by the latter group and notices of the change finally adopted will be sent to all manufacturers as soon as the ballot of the Approval Requirements Committee is completed.

Certain other revisions to the central heating gas appliance standards, tentatively adopted by the subcommittee, will shortly be distributed in printed form to members of the industry for criticism. Another meeting of the Subcommittee on Approval Requirements for Central Heating Gas Appliances will probably be held the latter part of March or the first part of April to consider comments and criticisms received and to complete the revisions for final consideration and adoption by the A. S. A. Sectional Committee. The next revised edition of the Approval Requirements for Central Heating Gas Appliances will become effective January 1, 1939.

Other important revisions to the current central heating gas appliance standards include: (1) revised requirements concerning the use of main burner valves or furnaces, (2) the conduct of combustion tests to determine the performance of draft hoods under down-draft conditions, and (3) the allowance of 1½ inches pressure drop through controls, instead of 1 inch, on furnaces of large capacities. Under the requirements as tentatively revised, main burner valves are no longer required on furnaces. Certain other revisions were made in the requirements to cover any contingencies of ignition and operation which might be affected by the change in the requirements for burner valves on furnaces.

Fan-Type Furnace Standards

In addition to the above, certain performance requirements applying to fan type floor furnaces have been made more rigid. For example, the revised requirements as adopted by the subcommittee specify that floor furnaces which include fans as integral parts of their construction but which do not have a temperature limit control, must be tested for compliance with the requirement for wall and floor temperatures with the fan stopped and with the filters, if provided, blocked to prevent the flow of air. Fan type floor furnaces must be equipped with temperature limit controls which will shut off the gas supply when the outlet temperature reaches 350° F. above room temperature, or so designed that this temperature cannot be exceeded with the fans stopped and the filters blocked. The efficiency of fan type floor furnaces has also been increased 5 per cent above that specified in the current standards. This latter revision is in line with the increase in efficiency for other fan type furnaces made effective January 1 of this year.

While certain requirements have been added as indicated, some others have been simplified, and those which have become obsolete or no longer applicable to current designs, have been deleted.

Range Committee Drafts Requirements for Electric Ignition Devices

AT the last meeting of the Subcommittee on Approval Requirements for Domestic Gas Ranges held in Cleveland on January 27 and 28, various construction and performance requirements for electric ignition systems for use on domestic gas ranges were adopted. In view of the urgency of having requirements available for such equipment for the use of the A. G. A. Testing Laboratories, the committee decided that these requirements should become effective immediately upon approval of the A. S. A. Sectional Committee, Project Z21, A. G. A. Approval Requirements Committee. The requirements in question are being taken up with the Approval Requirements Committee by letter ballot and if acted upon favorably, copies of these requirements will be mailed to all manufacturers of domestic ranges and other interested parties.

Wiring Specifications

The use of clocks, lamps and electric ignition on domestic ranges brought up the point of specifications as to wiring, transformers, etc. Heretofore, the Approval Requirements for Domestic Gas Ranges have not included any stipulations in regard to these items. A set of suggested requirements applying to these features, however, were considered by the subcommittee at its January meeting and it is expected that definite action will be taken along this line at the next session which will probably be held around the latter part of March.

While the next revised edition of the approval standards for domestic gas ranges will not go into effect until January 1, 1940, some of the changes in the current requirements which have been adopted by the subcommittee, may be of interest. Revisions adopted by the subcommittee will be published later and must be approved by the committee. A few of the revisions which are now pending are referred to below.

Pilots of automatic devices designed to prevent escape of unburned gas and used in conjunction with oven or broiler burners, must be so designed and installed that the relative position of the pilot and burner will be maintained constant under all conditions of service. This is important since if the distance between the pilot and main burner is affected by heating and cooling of the oven or by ordinary handling and operation of the appliance, improper ignition might result. The committee also felt that allowable time for the operation of these devices should be reduced; consequently, the time allowed for them to close was reduced from 5 to 2½ minutes and the time for them to open to 3 minutes. Those devices which require a constantly manually applied force to open them, must function within 2 minutes and those which operate each and every time the main burner or burners with which they are used are turned on or off, must open within 1½ minutes.

Since January 1, 1936, manufacturers of domestic ranges have been required to show the input rating to oven and broiler burners on the name plate attached to the appliance. At the November 17-18, 1937 meeting, the subcommittee revised the requirements to permit these ratings to be shown either on the name plate or on a separate plate attached to the range immediately adjacent to the name plate.

The top burner thermal efficiency requirement for domestic ranges has also been clarified and an 8-quart straight sided aluminum cooking pot with an inside depth of 7½ inches and inside diameter of 8⅞ inches has been specified for use in conducting thermal efficiency tests on giant burners instead of the 4-quart pan used for testing regular size top burners.

Butane Gas Appliances Included

Several of the requirements subcommittees are planning to extend their approval requirements to cover appliances for use with butane gas, including the Subcommittees on Approval Requirements for Domestic Gas Ranges, Water Heaters, Space Heaters and Refrigerators. Research leading to the development of such requirements is currently being carried on at the Association's Testing Laboratories in Cleveland. While no definite conclusions have yet been reached, the results of the investigations conducted thus far indicate that it may be possible to grant approval on appliances for use with both pure butane and pure propane, as a result of tests on butane gas only. The only changes in the appliance necessary would be in the size of the orifices and primary air adjustments.

Clothes Dryer Subcommittee Revises Standards

REVISIONS and expansions to the American Standard Approval Requirements for Clothes Dryers to cover appliances of the unvented or direct-fired type was probably the most significant action taken by the subcommittee at its meeting in Cleveland on January 21.

In deciding to extend the requirements to give recognition to direct-fired equipment, cognizance was taken of the desirability of increasing the rigidity of combustion tests, etc., for such appliances since they would, of course, not be connected to a flue. Limits on completeness of combustion were, therefore, reduced to only one-half the figure specified for vented dryers during the test under normal room conditions. In addition, combustion tests were added specifying tests on various types of gases in a 1000 cubic foot air-tight room, both of these requirements being the same as those specified for gas space heaters such as radiant heaters, circulators, gas logs, etc.

Thermostats Optional

The same limits as to screen temperatures, wall and floor temperatures and similar safety features are specified under the revisions for both direct and indirect dryers. The use of thermostats or other temperature limiting means as well as gas pressure regulators was made optional. When such accessories are supplied, however, suitable construction and performance requirements have been included to cover them.

Because of the increasing use of propane and butane gases for domestic purposes in rural and small communities beyond the reach of city-gas mains, the subcommittee decided that the approval standards should be expanded to cover dryers for use with such fuels. The construction and performance requirements for dryers for use with these gases are the same in most cases as those for natural, manufactured and mixed gases, with the addition of certain stipulations on tests necessitated by the characteristics of liquefied petroleum gases.

The revisions to the American Standard Approval Requirements for Clothes Dryers as adopted by the subcommittee have been printed and distributed to all gas company members and interested manufacturers for criticism. Those interested in these standards and who did not receive a copy may secure same upon application to the Testing Laboratories of the American Gas Association, 1032 East 62nd Street, Cleveland, Ohio.

Comments Invited

Any comments or criticisms of the revisions proposed by the subcommittee should be mailed as early in March as possible and directed to R. B. Harper, Chairman, A. S. A. Sectional Committee, Project Z21, A. G. A. Approval Requirements Committee, in care of the American Gas Association Testing Laboratories in Cleveland. Any such comments received will be carefully considered by the subcommittee concerned at its next meeting which will probably be held around the latter part of March.

It is contemplated that the revised edition of the clothes dryer standards will be completed in June to become effective January 1, 1939.

C. P. RANGE PROGRAM

(Continued from page 86)

gram designating which ranges meet the specifications and tests has been agreed on. This will have the letters "C. P." in a proper setting.

A copyright for use of the "C. P." symbol has been applied for.

A means of licensing manufacturers has been provided.

A means of certifying C. P. Ranges through responsible laboratories has been established.

All manufacturers of gas ranges have been mailed specifications and testing procedure and details of plan, etc.

When Will C. P. Ranges Be Available

No C. P. Ranges will be available before August 1, 1938. This date has been advanced from March 1 to August 1 to give ample opportunity for manufacturers to get their ranges *certified*—and to allow ample time for the utilities to become thoroughly familiar with the C. P. Range Program and to get set for a big nation-wide drive in August on C. P. Ranges.

GAS RADIO FEATURE

(Continued from page 89)

studies are carried out in the testing and improvement of all kinds of gas appliances for safety, durability and efficiency. This work has been done in cooperation with the National Bureau of Standards, the American Standards Association and other organizations. Today more than 95% of all gas appliances sold carry the seal of approval of the laboratories.

Gas is one of the greatest of all American industries. In it almost five billion dollars are invested, which is more than the capital invested in the steel industry, while the revenues of the entire industry last year were more than $800,000,000. And it employs directly more than 135,000, with an annual payroll in excess of $213,000,000. The wages of its employees average $1,575 a year for a forty-hour week.

America is fortunate in possessing the great resources of natural and manufactured gas. It is fortunate, too, because the fine and progressive spirit of the great American gas industry has made these natural resources serve a useful purpose for all our citizens.

No Villains with Gas Light

WITH conscious pride and poetical prose, "The New York Mirror," April 9, 1825, hailed the beautiful gas lamps as follows:

"It is really worth a walk to the Star Coffee House, in Nassau Street, to see the beautiful lamp in front of the door. It 'throws so much light up the subject' that we almost forget 'the heavens are hung in black,' or that 'the shades of night are around us.' It is supplied with gas by the company, and, as one of our brother editors would express himself, 'it looks down with conscious pride on all the little lamps that twinkle in their insignificance at a distance.'

"The proprietors of most of public places of amusement, and of our fashionable establishments, are making arrangements to introduce the gas, and when the pipes for the accommodation of the city are completed, there will be no dark corners for 'lurking villains' to frequent, for our streets will be almost as brilliant as when the sun is at high meridian."

Women's Freedom

A BRITISH gas journal quotes with amusement the following notice taken from the crowded classified advertisement columns of a Barbados newspaper:

Bridgetown Barbados

In the Year One thousand nine hundred and thirty seven An Act to improve the homes of the Island

Be it enacted by the House of Husbands in General Assembly, and by the authority of the same as follows: SECTION I—That all wives hereafter from this day shall have the lawful right to call at the Gas Showrooms and choose suitable Gas Appliances for their homes . . . . before X'mas Day.

Personnel Service

SERVICES OFFERED

Understands selection also methods for improving employee performance and morale; ten years' experience in one of largest combination gas and electric companies, also three years in government personnel work covering three states; familiar with employee training needs and understands how to correct and meet public demand for high quality service. College background. 1160.

Manager and Engineer—Over 20 years operating experience on coke oven and water gas plants and with utility management. Experienced in plant and distribution design and construction; with both high and low temperature carbonization processes; gas and equipment sales and survey work and familiar with all domestic, commercial, industrial and house heating equipment. **1170.**

Gas Engineer—graduate mechanical engineer, 20 years of broad experience in design, construction and operating with several large well managed gas properties. **1174.**

Young **natural gas engineer,** with eight years' experience, transmission lines, gas measurement, distribution, design of high and low pressure distribution systems, and maintenance. Outstanding record in heating, air conditioning and industrial installation design and supervision. Good personality, responsible, can handle any problem. Good health, married. **1176.**

Experimental engineer, over 6 years' field and research laboratory experience in pipe coatings and corrosion, gums, oils, etc.; load dispatching, measurement, unaccounted-for high and low pressure distribution practice, designs, property damage, customer service. Familiar with water gas manufacture. Previous 5 years' experience as water works chemist. Graduate chemical engineer, licensed, (34). **1179.**

Gas Engineer—wide experience in production, distribution and utilization of manufactured and natural gas. Built up and supervised large force to take inventory of gas properties (M. E.); licensed professional engineer. Available on short notice. **1181.**

Versatile Writer with corporation training and experience in personnel and public good will efforts; surveys, advertising publicity and employee publications seeks the interest of executive of progressive utility in which these qualifications offer him opportunity. Alert and physically fit; family of three; now employed. **1182.**

SERVICES OFFERED

Engineer-Accountant—Ten years' experience, with large utility, seven years' supervisor of engineering, plant accounting, mortality, drafting and plant property records; four years' inventory and valuation. Three years' experience estimating and administration of legal agreements with other companies; understands cost accounting (36). **1183.**

State **distribution** or **selling** position. New Jersey preferred. Domestic Gas ranges or allied line. Wide selling experience. Now selling gas companies and dealers in New Jersey. Married, good health. **1184.**

Appliance Salesman—seeking a substantial line. Interested in knowing territories now available and on what basis. Have contacts with appliance dealers and utilities, in various territories. Will consider expense and commission proposition. Twenty years' experience, with a following. **1185.**

Valuation Accountant—having broad diversified experience in preparation of cost appraisals. Capable in organization and developing personnel for inventories, pricing and keeping fixed capital records. **1186.**

Gas Engineer (graduate, 1936) desires position with firm in the gas or allied industries. Have had one and one-half years' experience in by-product coke oven plant. **1187.**

Research and **development engineer** where an extensive and varied experience combined with initiative and originality will enable him to put to practical use his own or another's ideas; graduate engineer, has a Professional Engineer's license. (N. Y.) **1188.**

Pipefitter, Welder, labor foreman; 9½ years with large southern gas company desires position with pipe line or gas company. Experience in laying mains, installation and servicing appliances, (29). **1189.**

Advertising Manager—11 years' experience as advertising manager large gas, electric and local transportation companies, plus 2 years as agency account representative. Thoroughly trained in planning and producing all types of advertising, publicity and sales promotion campaigns. Proved record of success. College graduate, age 34. Exceptional references. Moderate salary. **1190.**

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